National Scrapie Eradication Program

Fiscal Year 2011 Report

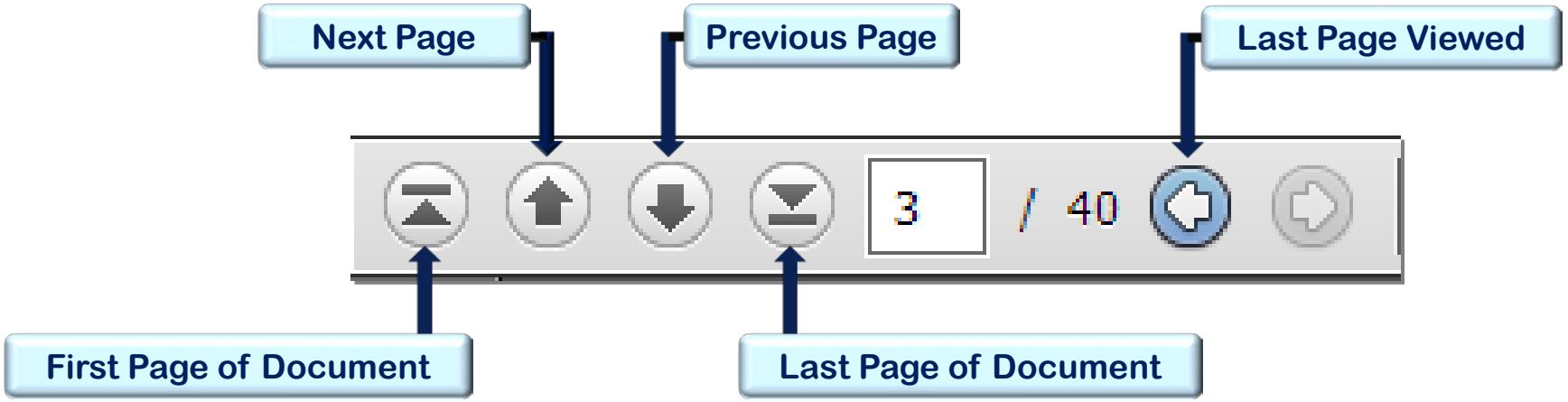
October 1, 2010 to September 30, 2011

United States Department of Agriculture
Animal Plant Health Inspection Service
Veterinary Services
National Center for Animal Health Programs
Ruminant Health Programs

Prepared December 31, 2011

A Note on Navigation

This presentation has hyperlinks for navigation. Text in blue is a hyperlink to the slide or website being discussed. Additionally, the Adobe navigation bar has been activated to help readers move through this document with greater freedom. The navigation bar is located along the upper left hand border of the page. Below is a description of the action of each button activated on the navigation bar.



Introduction

The national scrapie eradication program focuses on six primary areas:

- Education and prevention
- Animal identification and compliance
- Surveillance [Regulatory Scrapie Slaughter Surveillance (RSSS) and on-farm]
- Tracing and testing positive and exposed animals
- Cleanup of infected and source flocks through genetic susceptibility testing and indemnification of susceptible exposed animals
- The Scrapie Free Flock Certification Program (SFCP)

The National Scrapie Eradication Program continued to make excellent progress in FY 2011. In FY 2011, the percent of cull sheep found positive at slaughter, adjusted for face color, decreased to 0.0058 percent. This measure of prevalence has decreased 96 percent since slaughter surveillance started in FY 2003 and 47 percent since FY 2010. There was also a 38% decrease in the number of infected and source flocks identified during FY 2011 compared to FY 2010.

National Scrapie Surveillance Plan

In FY 2010, APHIS updated its National Scrapie Surveillance Plan to include sampling minimums for sheep based on their state-of-origin to ensure adequate geographical representation to document scrapie freedom. It also outlines the proposed approach to conducting ongoing slaughter surveillance in nonclinical goats. The plan can be viewed and downloaded at the following address:

http://www.aphis.usda.gov/animal_health/animal_diseases/scrapie/downloads/national_scrapie_surv_plan.pdf

Percent of the sampling minimum achieved by each state is depicted in **Figure 1**. A State's percentage is based on the total number of sheep and goats sampled through Regulatory Scrapie Slaughter Surveillance (RSSS) or on-farm surveillance. Sampling minimums are based on the number of breeding sheep in each state. Calculation of the sampling minimums is described in the surveillance plan.

Infected and Source Flocks

At the beginning of FY 2011, there were 5 flocks with open infected or source statuses (**Table 1** and **Figure 2**). During the year, 11 new source flocks and 4 new infected flocks were reported (**Figure 3**) and 17 flocks completed a clean-up plan and were released (**Figure 4**). As of September 30, 2011, 3 scrapie infected and source flocks had open statuses (**Figure 5**). The ratio of infected and source flocks released to newly identified infected and source flocks for FY 2011 = 1.3 : 1. New infected and source statuses from FY 1997 to FY 2011 are shown in **Chart 1**.

Positive Scrapie Cases

In FY 2011, 28 cases of classical scrapie and 2 cases of Nor98-like scrapie were confirmed by the National Veterinary Services Laboratories (NVSL); 10 were Regulatory Scrapie Slaughter Surveillance (RSSS) cases and 20 were field cases, including 10 positive goats from the same herd (**Table 2** and **Figure 6**). With these positives, 31 cases of scrapie in goats have been confirmed by NVSL since implementation of the regulatory changes in FY 2002 (**Figure 7**). Field cases are positive animals that were tested as part of a disease investigation including potentially exposed, exposed and suspect animals and other animals sampled on-farm.

Indemnity

Approximately 779 sheep and goats were indemnified in FY 2011. A breakdown by species and registration status is depicted on **Chart 2**. The average cost for indemnity and disposal was approximately $211 per animal. Reasons for indemnity are listed in **Table 3**. Claims for indemnity during FY 2011 increased by 41% compared to FY 2010 primarily due to the increase in sheep and goat prices in FY 2011.

Regulatory Scrapie Slaughter Surveillance (RSSS)

RSSS started April 1, 2003. It is a targeted slaughter surveillance program which is designed to identify infected flocks. Samples have been collected from 313,914 animals since April 1, 2003. There have been 455 NVSL confirmed positive animals since the beginning of RSSS. In FY 2011, 37,192 samples were collected at 167 sites in 40 states. Collection site locations and the states that comprise the Eastern and Western Regions are shown in **Figure 8**. The number of RSSS samples collected for FY 2011 by month and by region where collected is shown in **Chart 3**. A monthly comparison of RSSS collections by fiscal year is displayed in **Chart 4**. The map in **Figure 9** shows RSSS sampling by state of collection; **Figure 10** shows sampling by state of tag origination (application). **Chart 5** and **Chart 6** depict RSSS collections by region of collection and by region of eartag application from FY 2003 through FY 2011. Percent of RSSS samples collected by face color and species from FY 2003 through FY 2011 is plotted in **Chart 7**.

Nine samples, all from black-faced sheep, collected in FY 2011 tested positive for classical scrapie. One animal tested positive for Nor98-like scrapie. The distribution of positive cases by state of tag origination (application) is depicted in **Figure 11**. **Chart 8** and **Chart 9** show the percent of samples that have tested positive for each face color from FY 2003 through 2011; **Chart 10** shows the percent of cull sheep found positive at slaughter and adjusted for face color. Positive animals from the same flock and Nor98-like cases are not included in either of these charts. A retrospective 6 month rolling average of the percent positive, black-faced sheep sampled at RSSS collections sites is shown in **Chart 11**. Success in tracing RSSS positive animals to flock of origin is shown in **Chart 12**. The decline in traceability is not statistically significant due to the small numbers involved.

Scrapie Testing

In FY 2011, 40,188 animals were sampled for scrapie testing: 37,192 RSSS samples, 2,020 regulatory field cases, and 976 live-animal biopsies (**Chart 13**).

Flock Identification Numbers Assigned and Official Sheep and Goat Eartags Issued

As of September 30, 2011, 162,893 sheep and goat flocks/herds have been assigned flock identification numbers in the Scrapie National Generic Database (SNGD). This represents an increase of 9.7 percent from the previous year. Official sheep and goat eartags have been issued to 150,253 of these flocks/herds, an increase of 21.5 percent from FY 2010. The total number of sheep and goat flock/herds assigned flocks identification numbers in the SNGD and issued official eartags from 2003 through 2011 is shown in **Chart 14**. **Figure 12** and **Figure 13** are maps showing the percent of sheep and goat flocks/herds by state that have been assigned flock identification numbers in the SNGD.

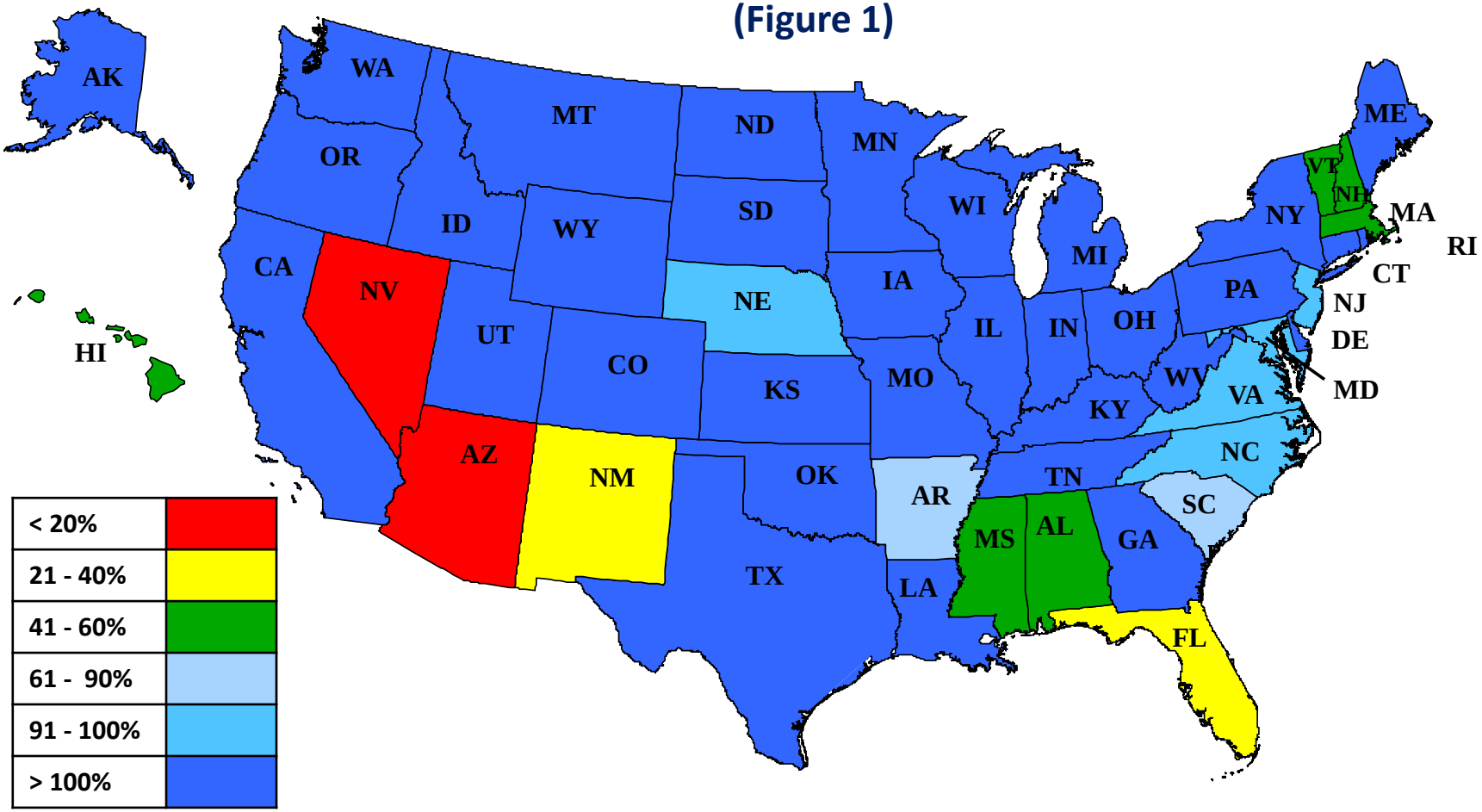
Scrapie Flock Certification Program

At the end of the FY, there were 1,510 flocks enrolled in the SFCP—824 complete monitored, 619 certified, 55 export monitored, 6 export certified, and 6 selective monitored (**Figure 14**). Although 119 flocks enrolled or became certified in SFCP during FY 2011, participation in SFCP continues to decrease. SFCP open statuses by fiscal year from FY 1997 to FY 2011 are depicted in **Chart 15**.

This report is based on data available in the database and test results reported at the time final year-end reports were generated. As a result this report is not identical to the September 2010 monthly report since it contains updates to data not available at the time the monthly report was generated. RSSS positives are reported based on collection date and may have been confirmed after September 30, 2010.

Percent of Sampling Minimum* Achieved in FY 2011—RSSS and On-farm Surveillance

(Figure 1)



* Percent of sampling minimum is based on the total number of sheep and goats sampled through Regulatory Scrapie Slaughter Surveillance (RSSS) or On-farm Surveillance.

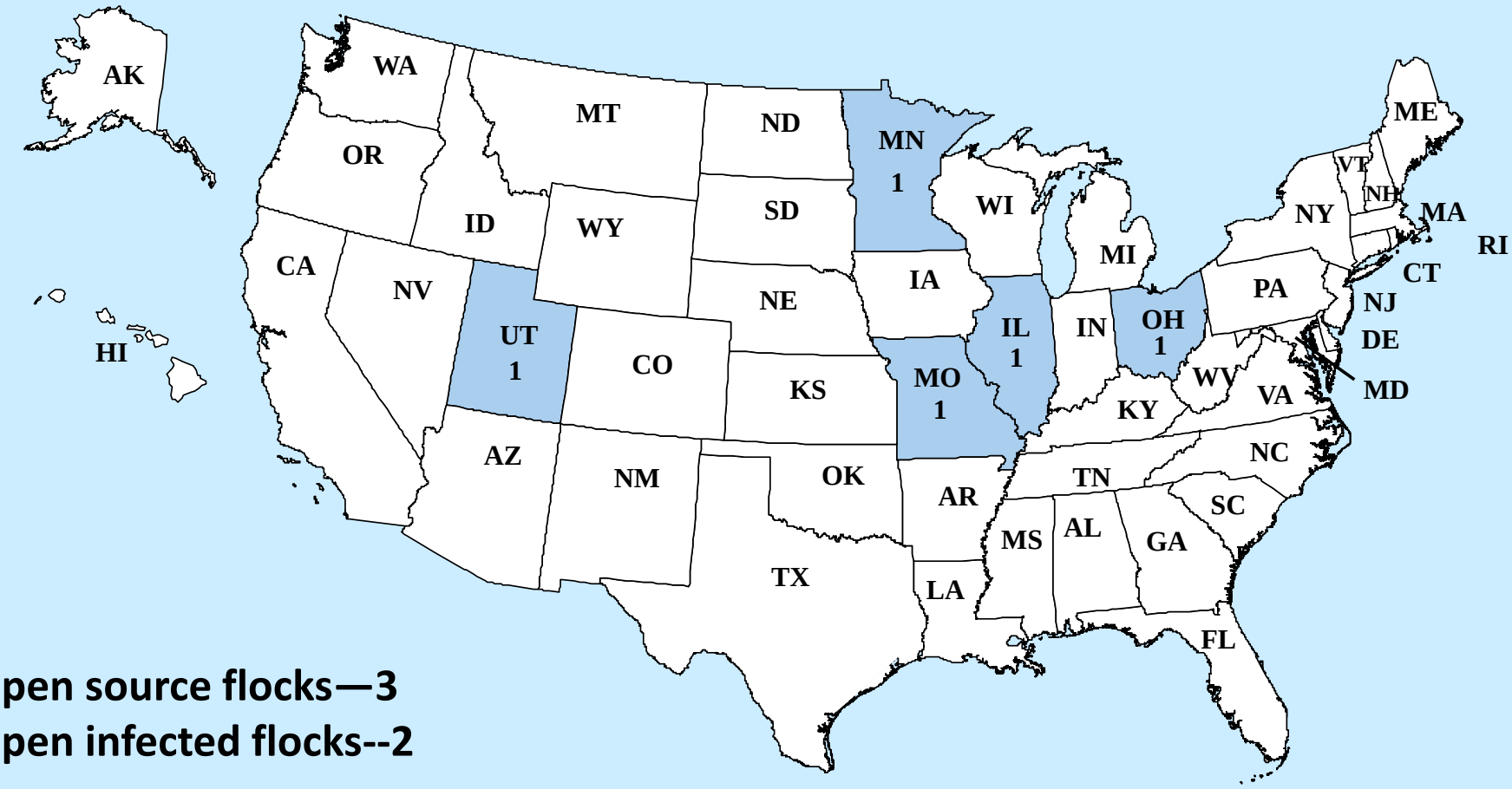
Scrapie Infected and Source Flocks
FY 2011 Overview

(Table 1)

Infected/Source flocks with an open status at the start of FY 2011	5
New Infected/Source flocks in FY 2011	15
Infected/Source flocks released in FY 2011	17
Infected/Source flocks currently with an open status at the end of FY 2011	3

Scrapie Infected and Source Flocks: Open Statuses as of October 1, 2010

(Figure 2)

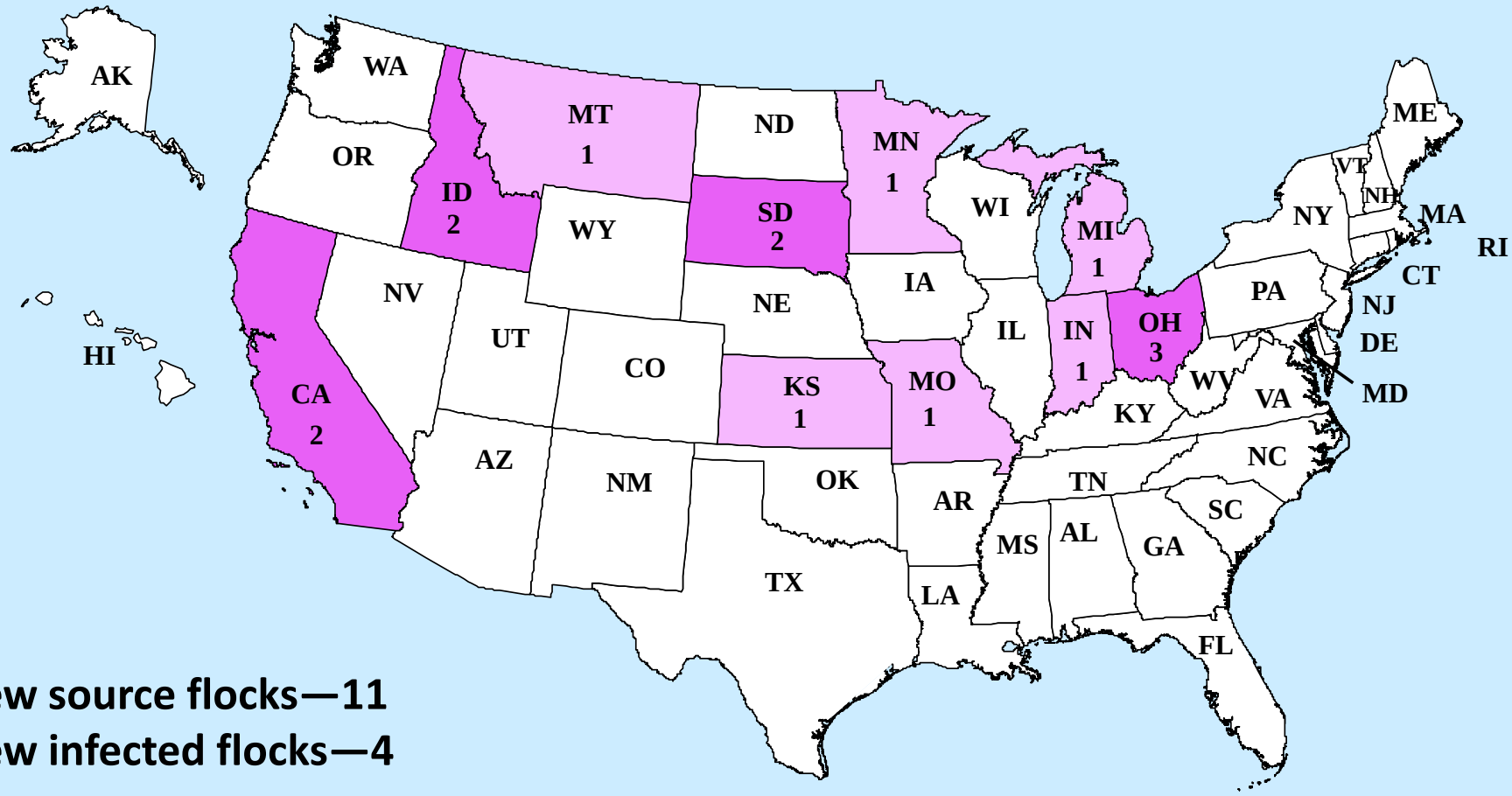


Open source flocks—3
Open infected flocks--2

New Scrapie Infected and Source Flocks

FY 2011

(Figure 3)



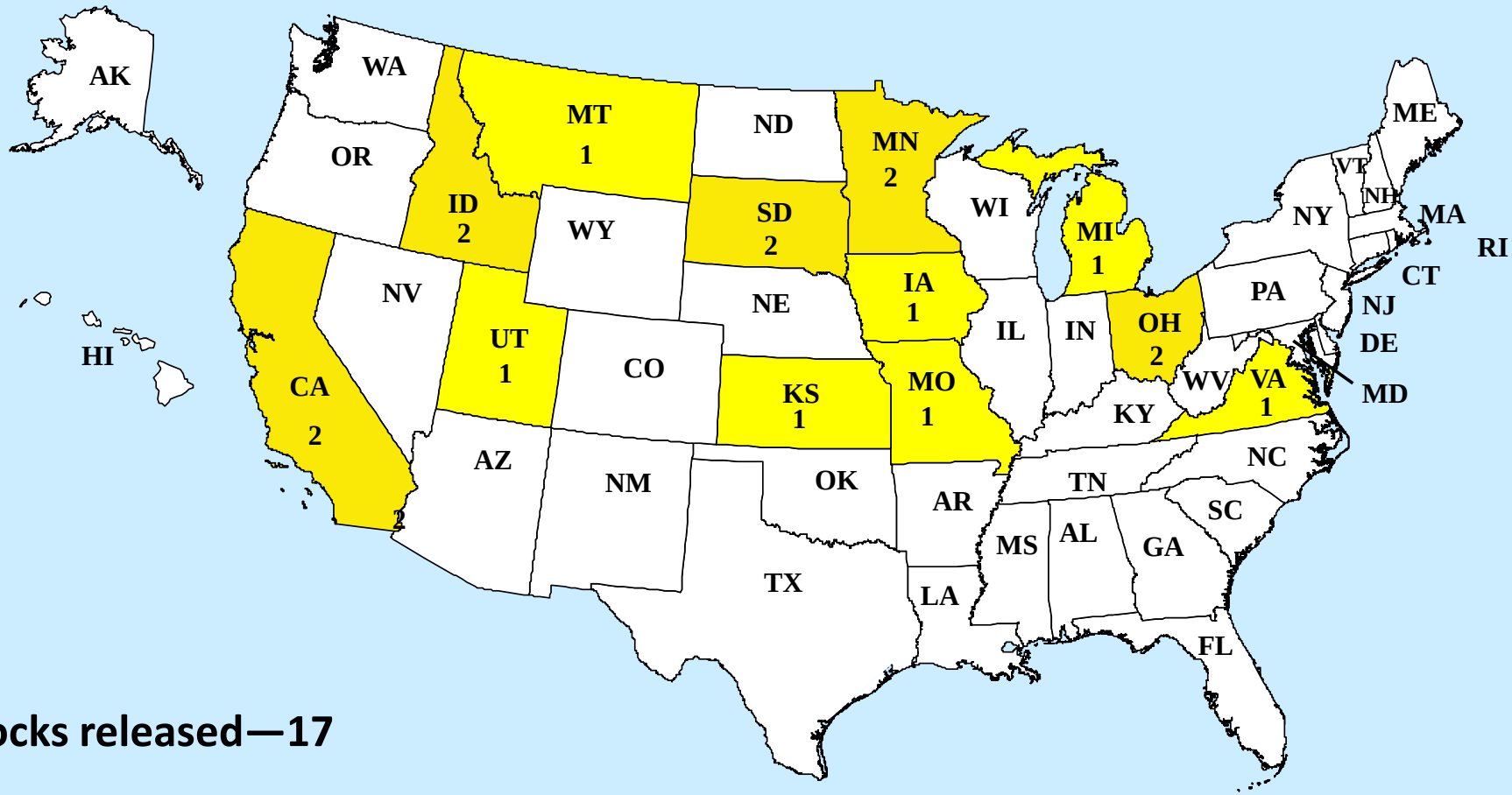
New source flocks—11

New infected flocks—4

Released Scrapie Infected and Source Flocks

FY 2011

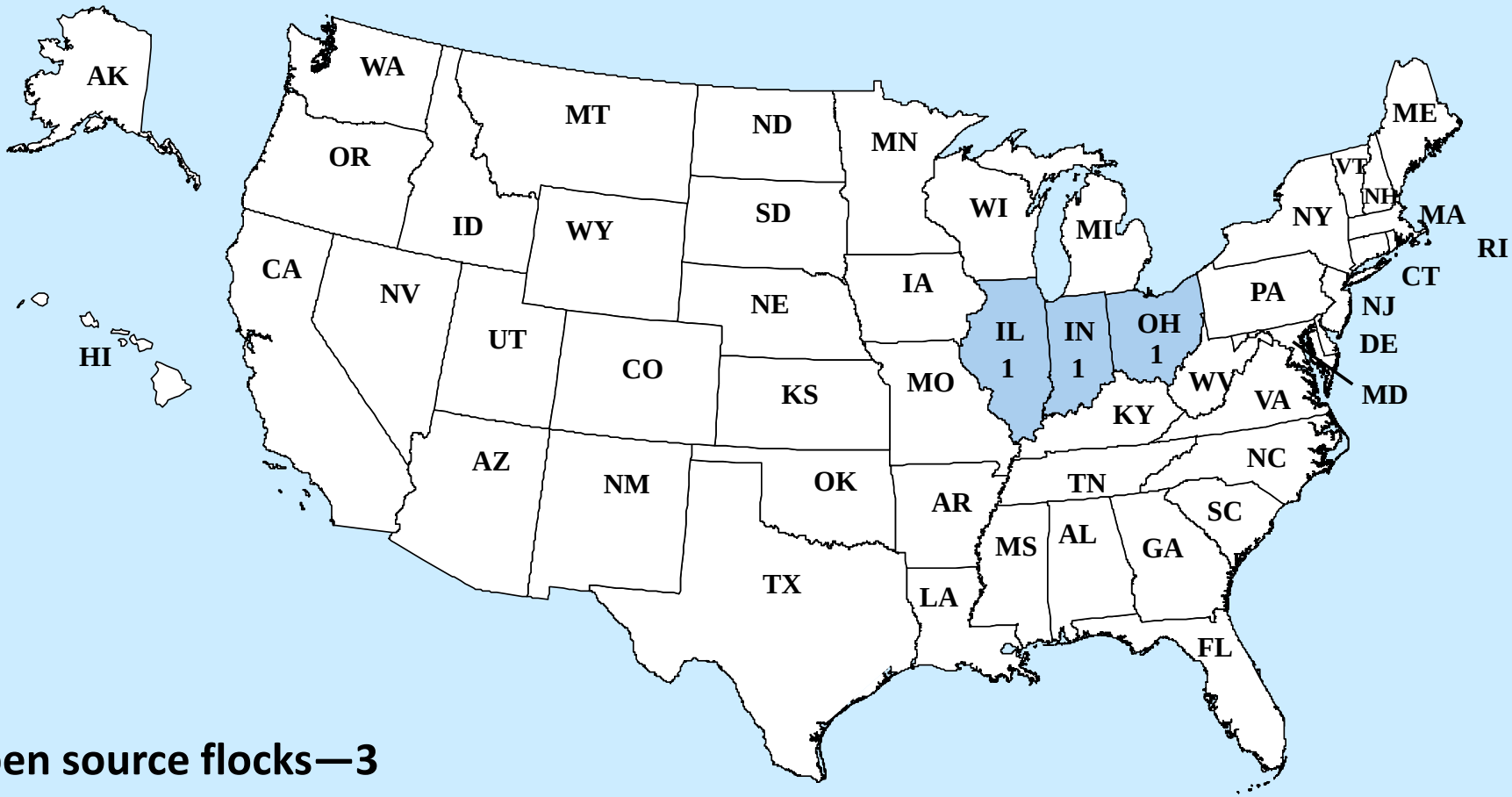
(Figure 4)



Flocks released—17

Scrapie Infected and Source Flocks: Open Statuses as of September 30, 2011

(Figure 5)

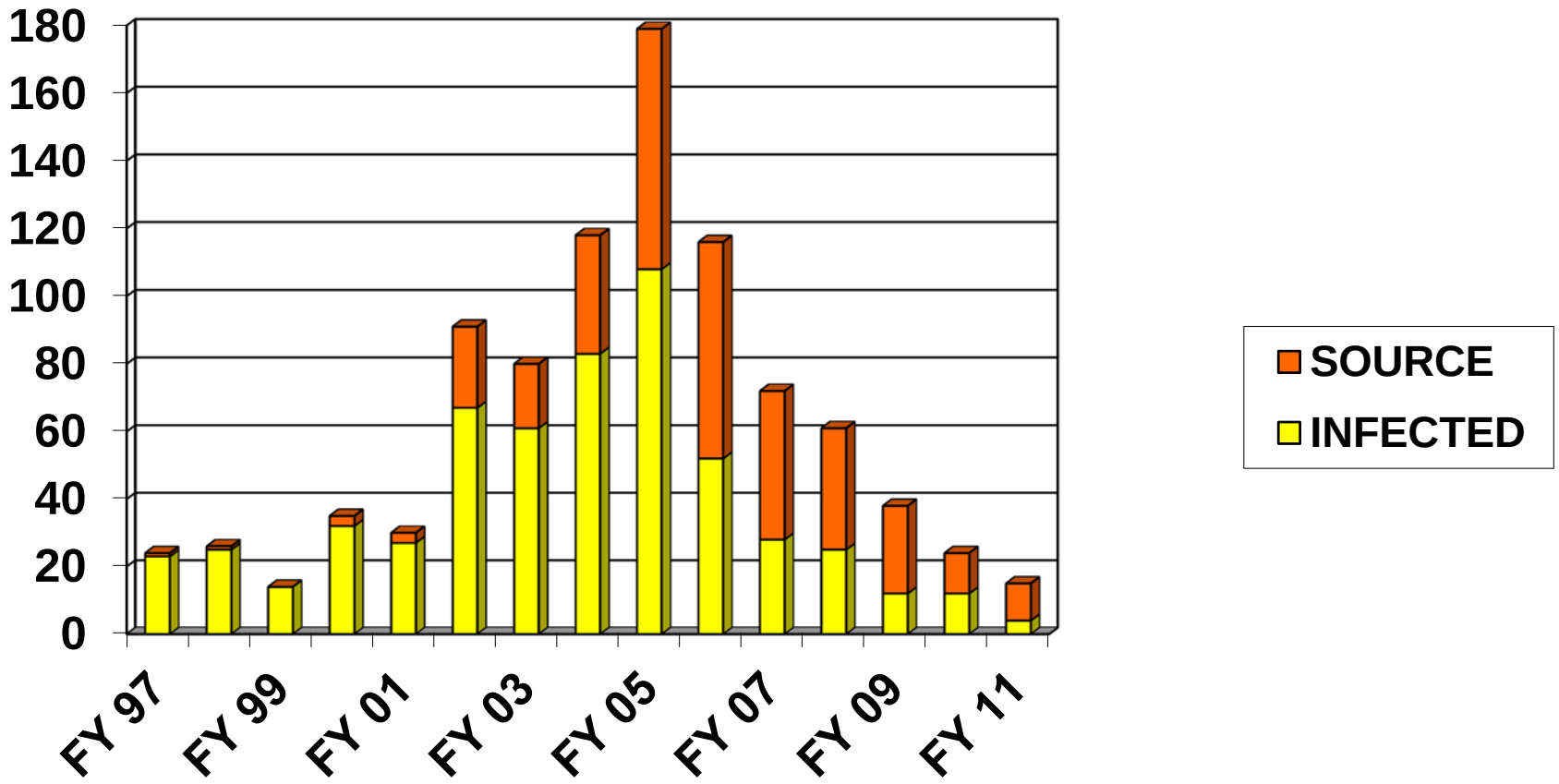


Open source flocks—3

Infected and Source Flocks: New Statuses by Year

FY 1997 – 2011

(Chart 1)



Scrapie Confirmed Cases

FY 2011 Overview

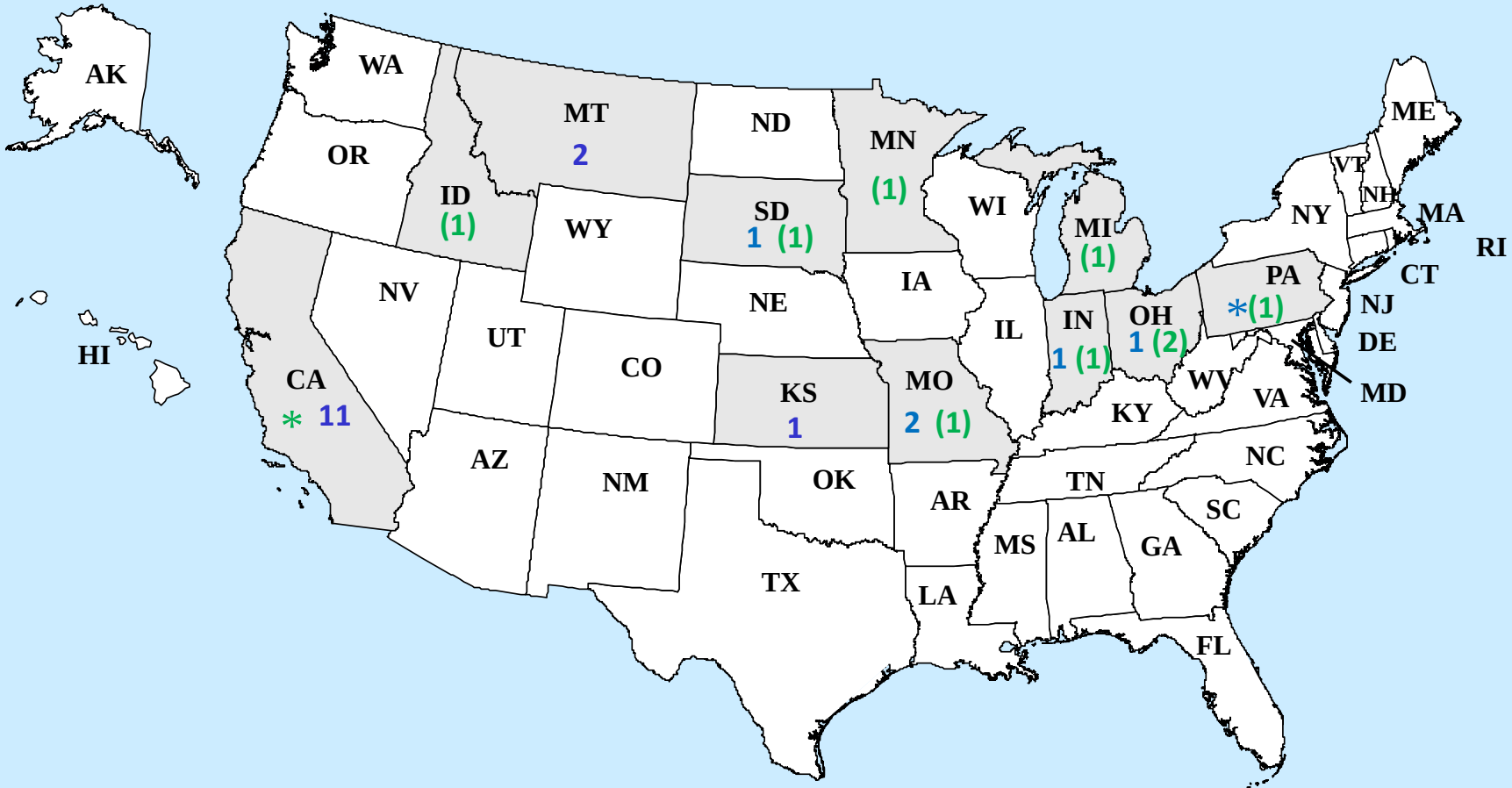
(Table 2)

Classical Scrapie Cases • RSSS positives • Field positives*	**28 Cases** • 9 • 19
Nor98-like Scrapie Cases • RSSS positives • Field positives*	**2 Cases** • 1 • 1

* **Cases found as a result of testing scrapie exposed and suspect animals removed from infected, source, and exposed flocks.**

Scrapie Confirmed Cases in FY 2011

(Figure 6)



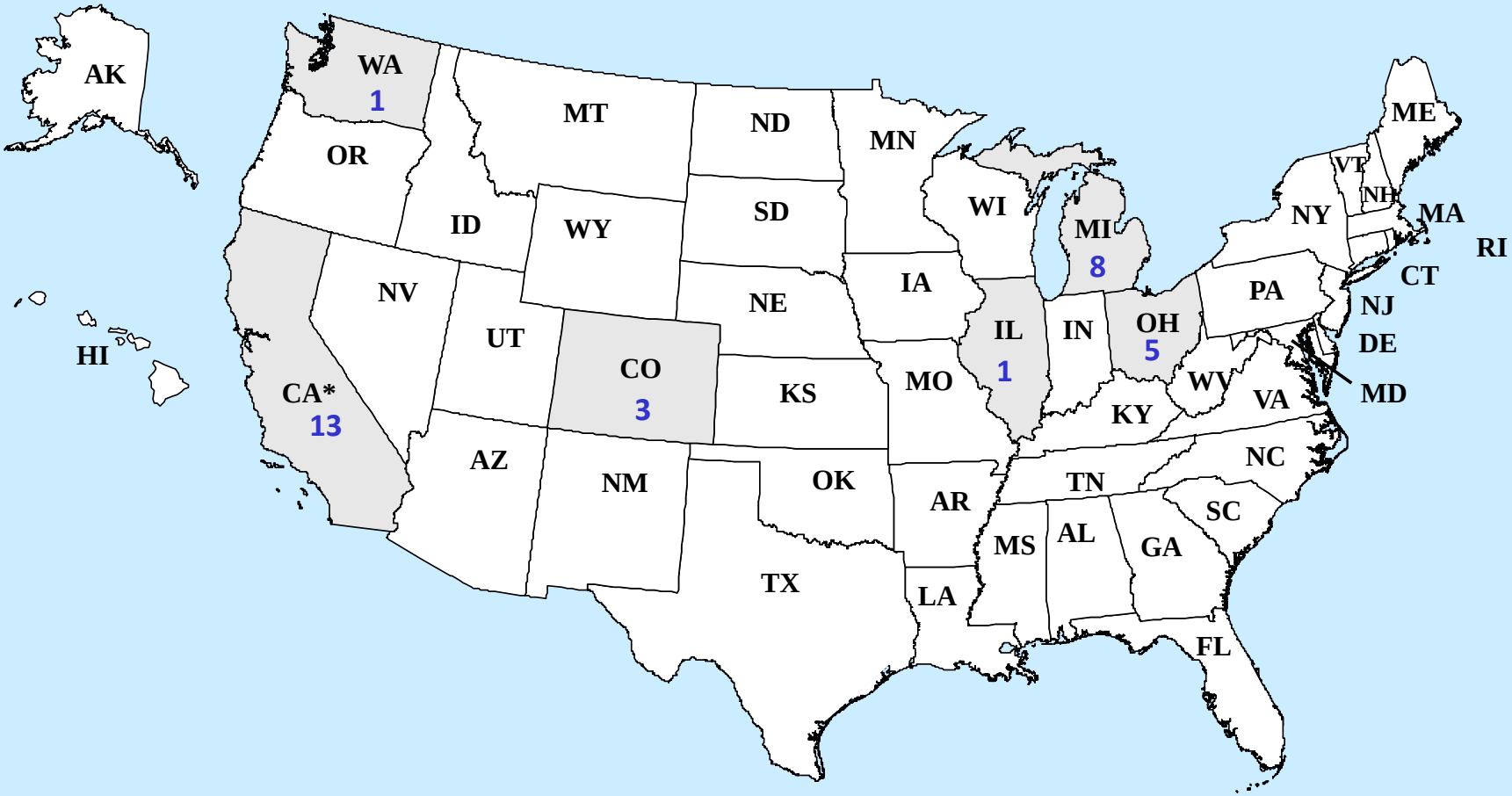
Classical scrapie cases = 28; Nor98-like scrapie cases = 2

20 Field Cases (including 10 positive goats from one herd); 10 RSSS cases (n) (Reported by State of ID tag. Collected in FY 2011 and confirmed by EOY reporting date.) Asterisk indicates Nor98-like cases. Note: Field cases include animals removed from infected/source flocks so state totals often include several animals from the same flock.

Scrapie Cases in Goats

FY 2002 – FY 2011

(Figure 7)



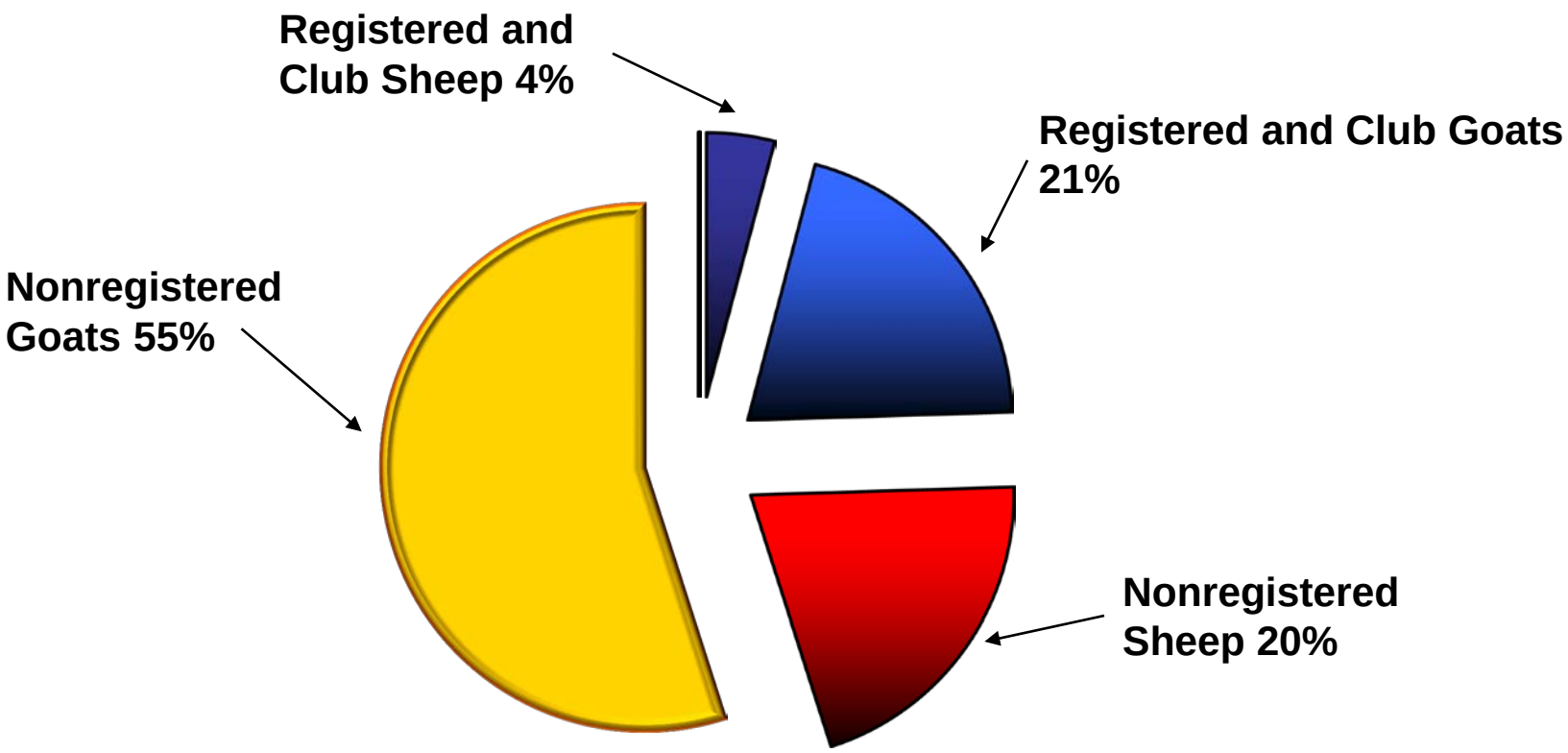
Total Goat Cases: 31 classical scrapie cases; 0 Nor98-like scrapie cases

31 field cases; 0 RSSS cases

*** Last herd with infected goats designated in February 2011.**

Indemnity Claims FY 2011

(Chart 2)



Total number of animals indemnified: 779 (ER-84, WR-695)

Total amount spent: indemnification and disposal $164,763 (ER-$20,266; WR-$144,497)

The average cost: $211 per animal

Indemnity Reasons

FY 2011

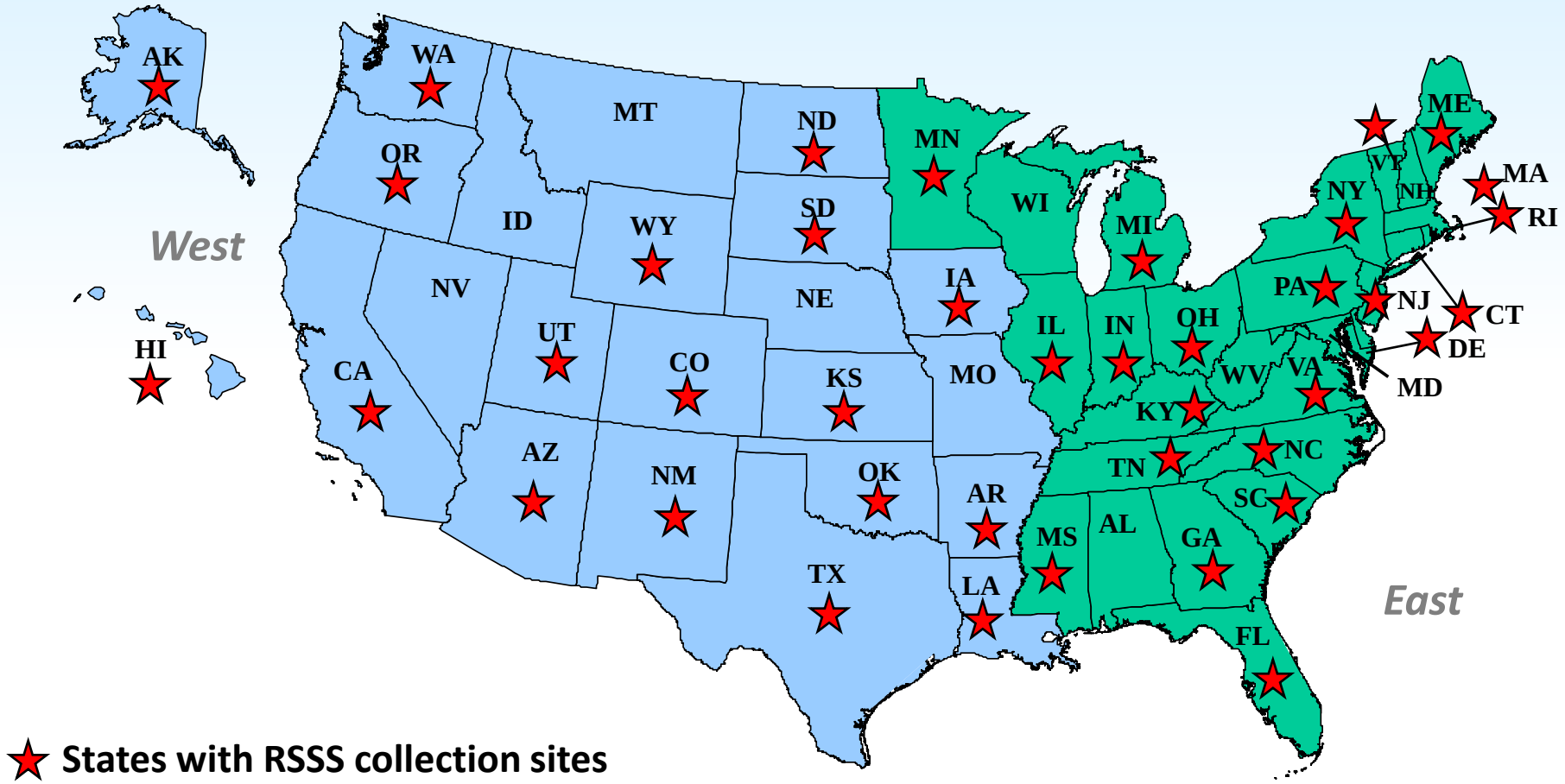
(Table 3)

Flocks with traced exposed animals	13
Exposed flock necropsy testing	1
Genetic flock plan	36
Depopulation of all sexually intact animals	1
Suspects	4
Not reported	1

RSSS Sample Collections FY 2011

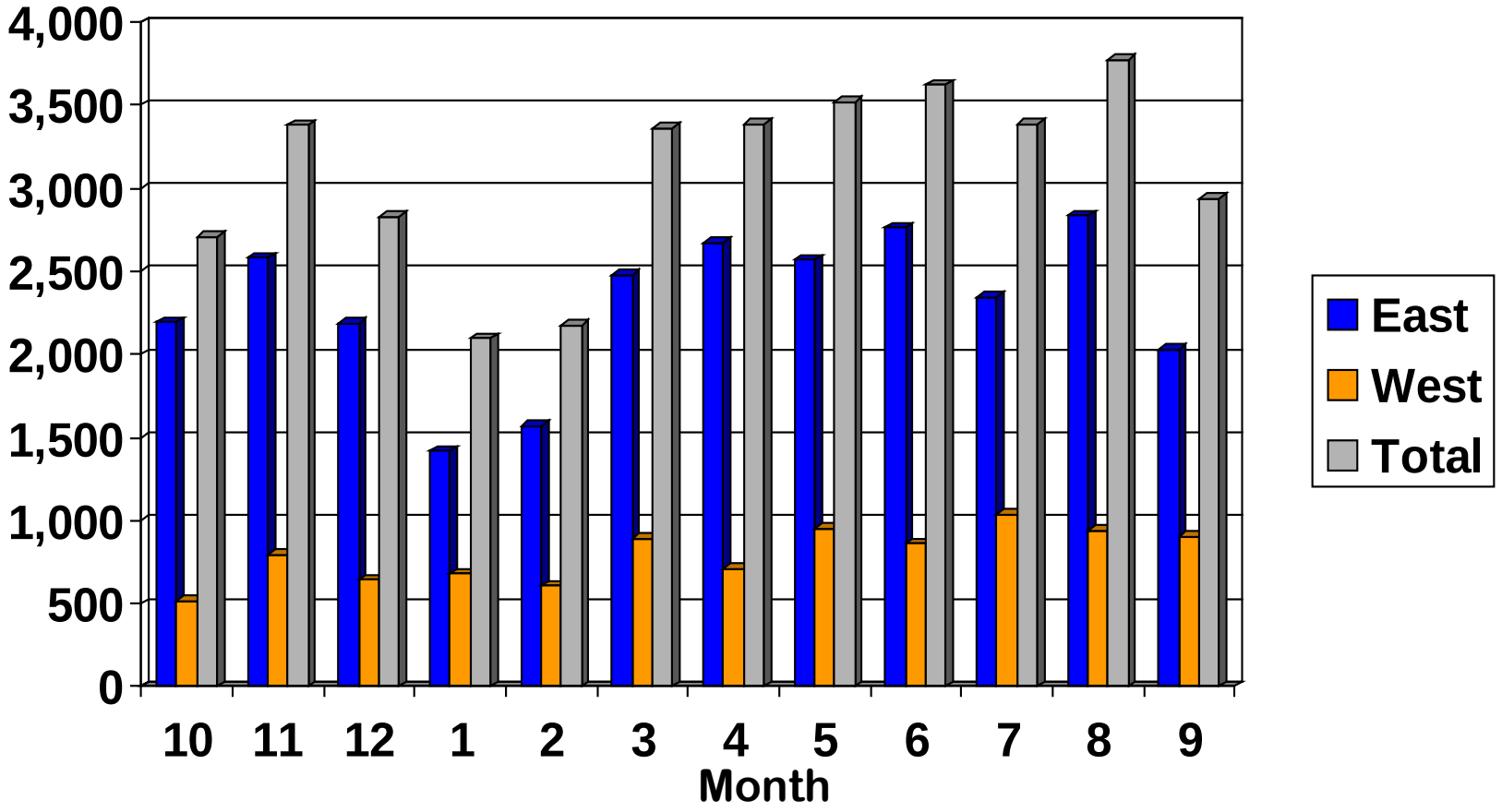
167 collection sites in 40 states & sent to 15 laboratories

(Figure 8)



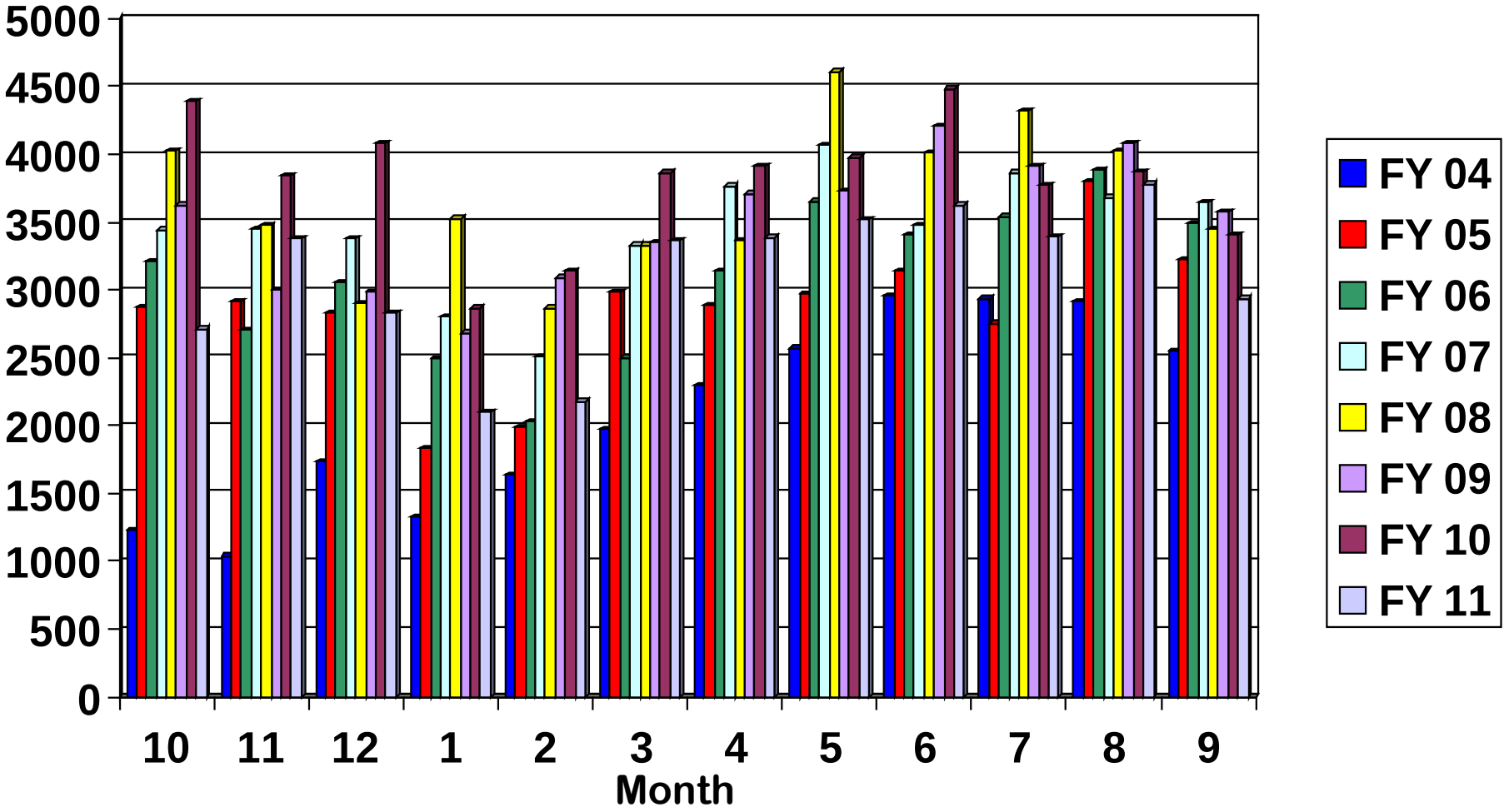
Slaughter Surveillance Samples Collected by Month, by VS Region where collected, & by Total in FY 2011

(Chart 3)



Slaughter Surveillance Samples Collected by Month for each Fiscal Year 2004 to 2011

(Chart 4)

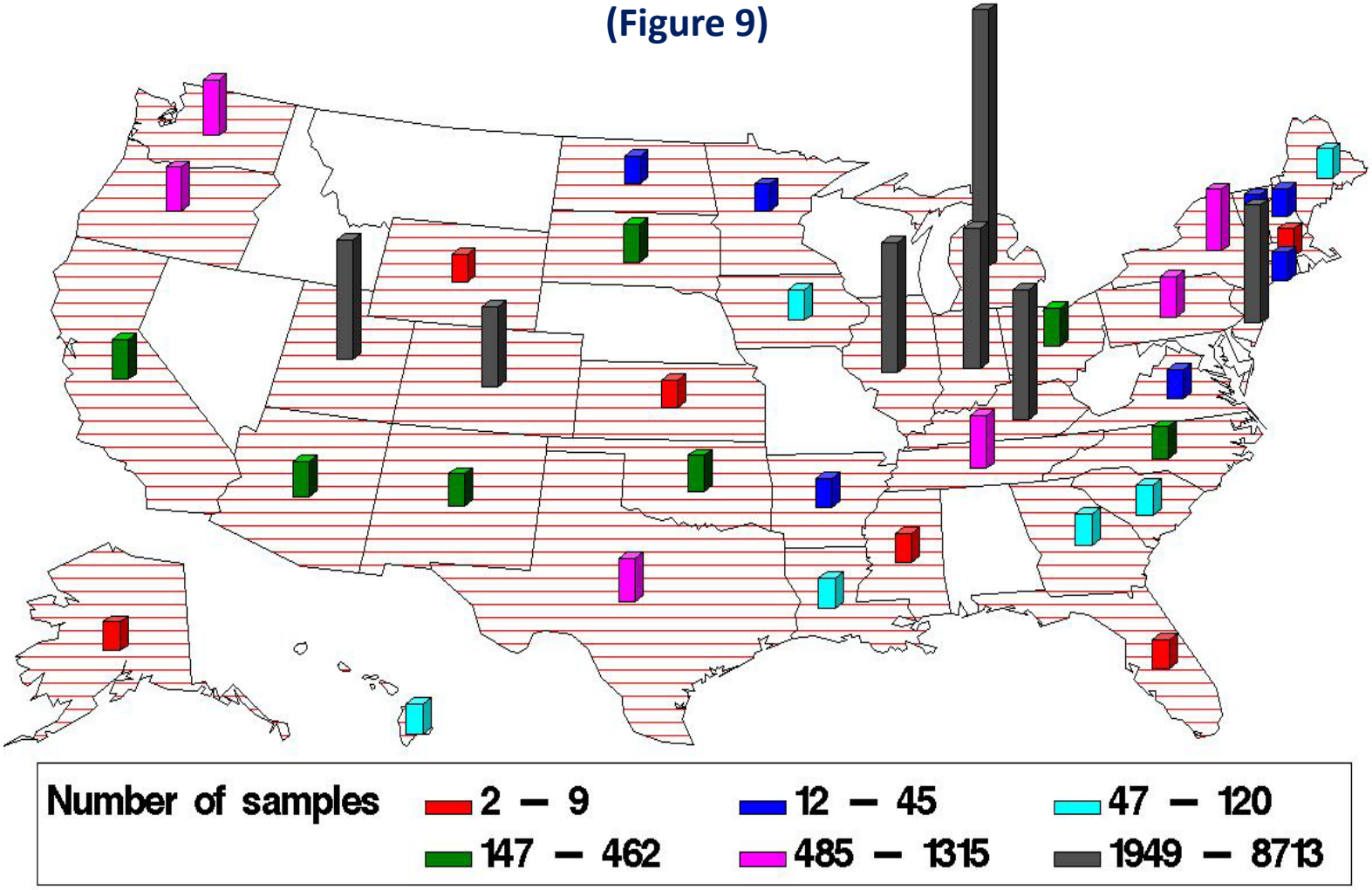


Regulatory Scrapie Slaughter Surveillance

Number of Samples Collected, FY 2011

BY STATE OF COLLECTION

(Figure 9)

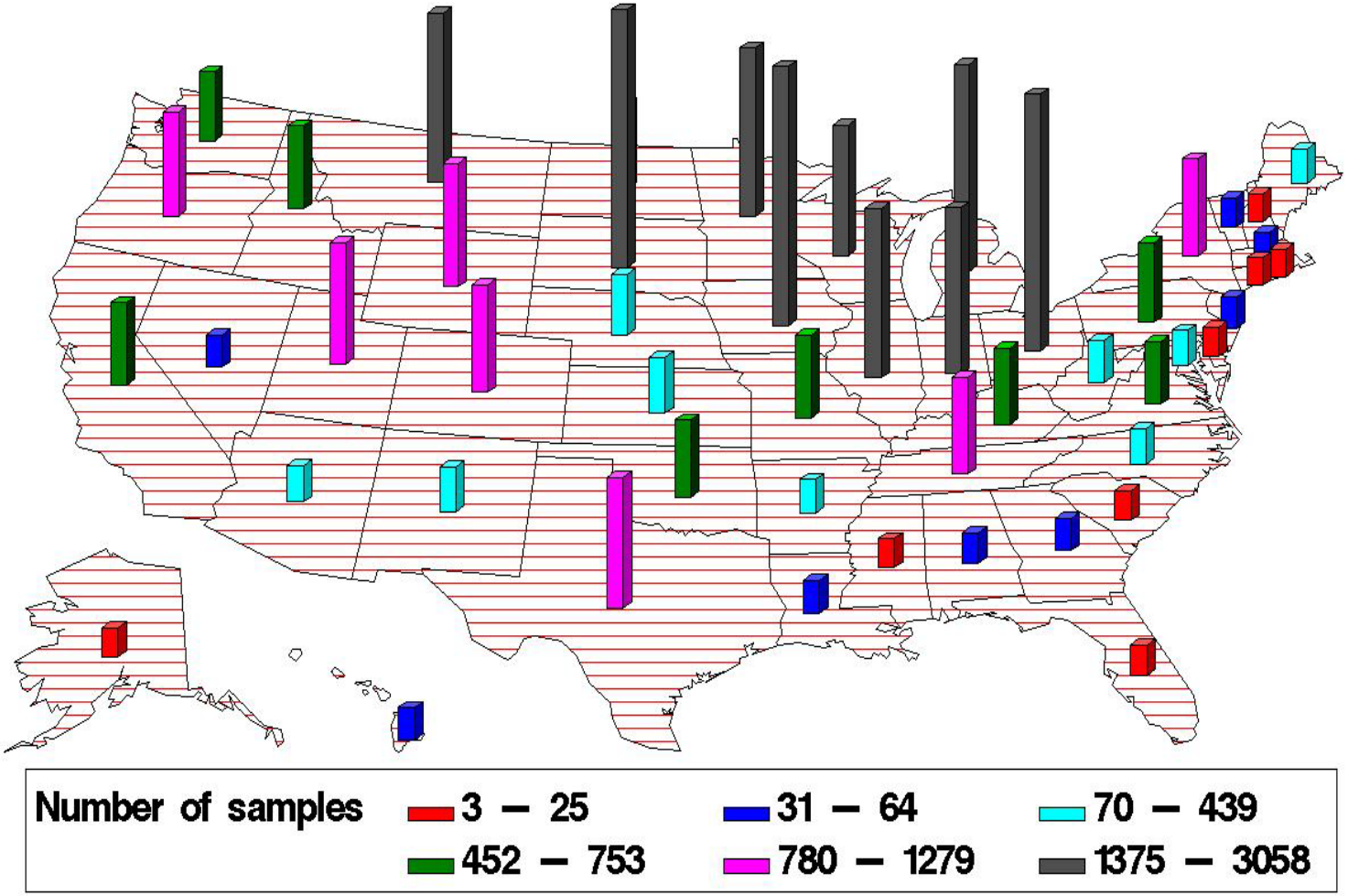


Regulatory Scrapie Slaughter Surveillance

Number of Samples Collected, FY 2011

BY STATE OF TAG ORIGINATION

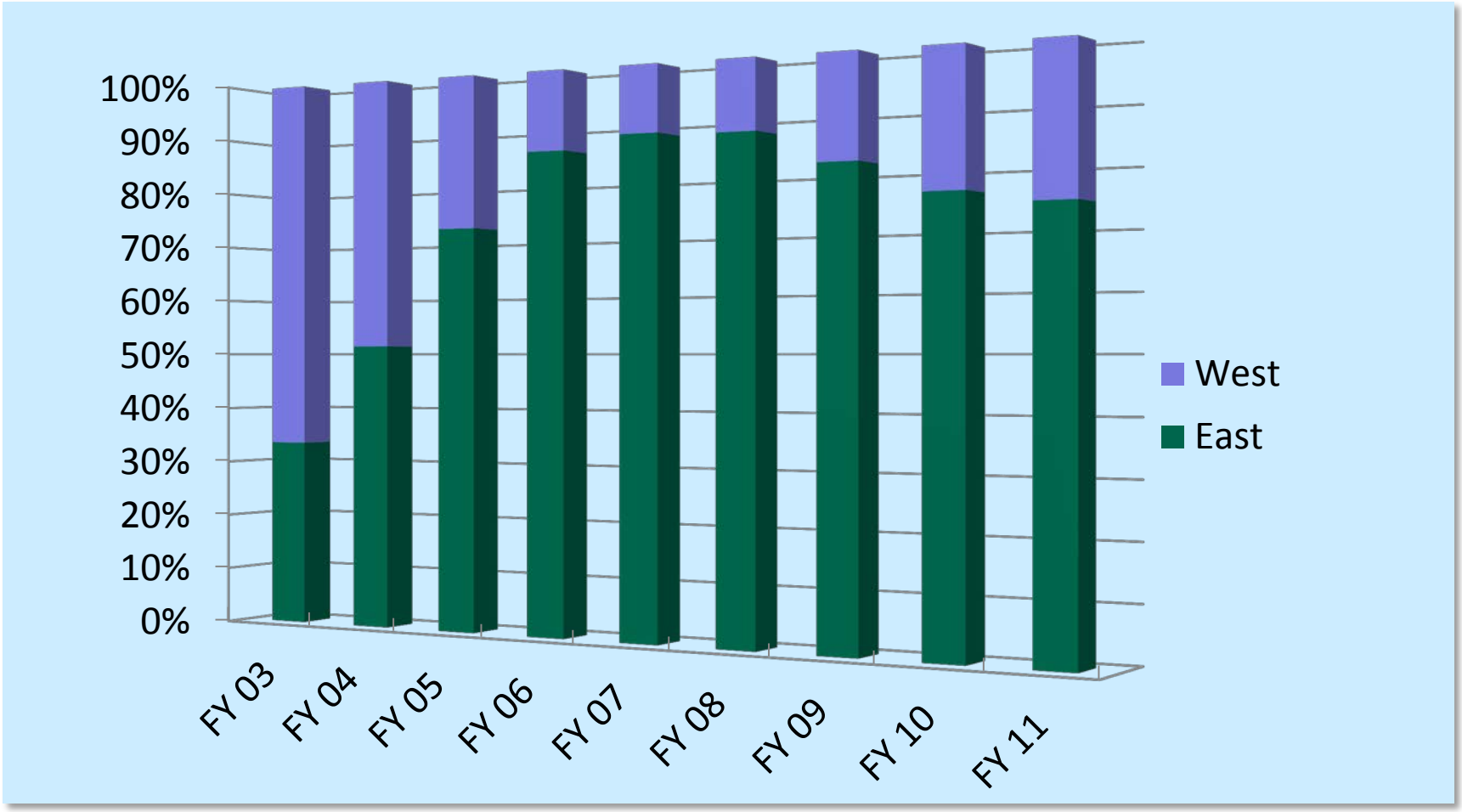
(Figure 10)



Percent RSSS Samples by Region of Sample Collection

FY 2003-2011

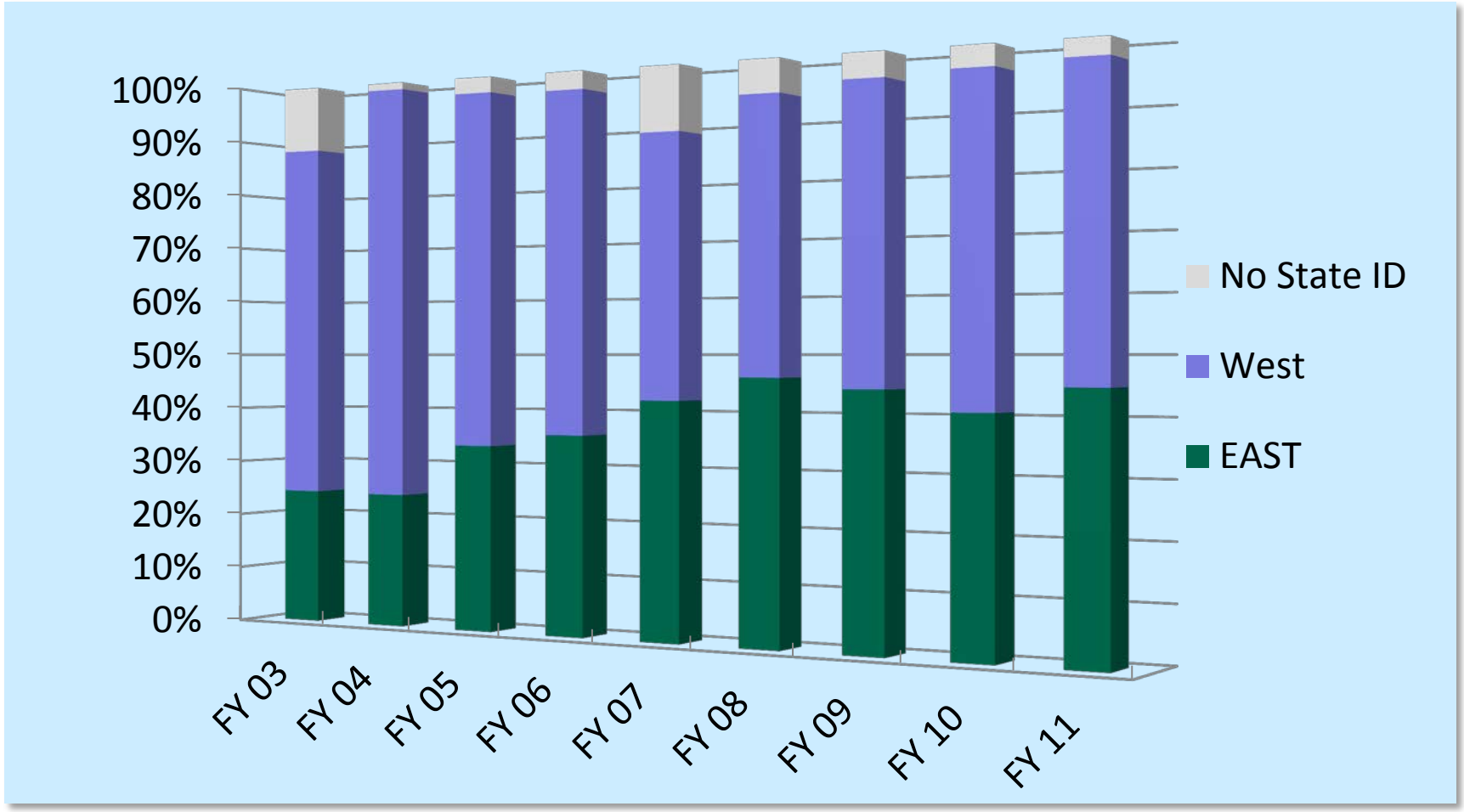
(Chart 5)



Percent RSSS Samples by Region of Eartag Application

FY 2003-2011

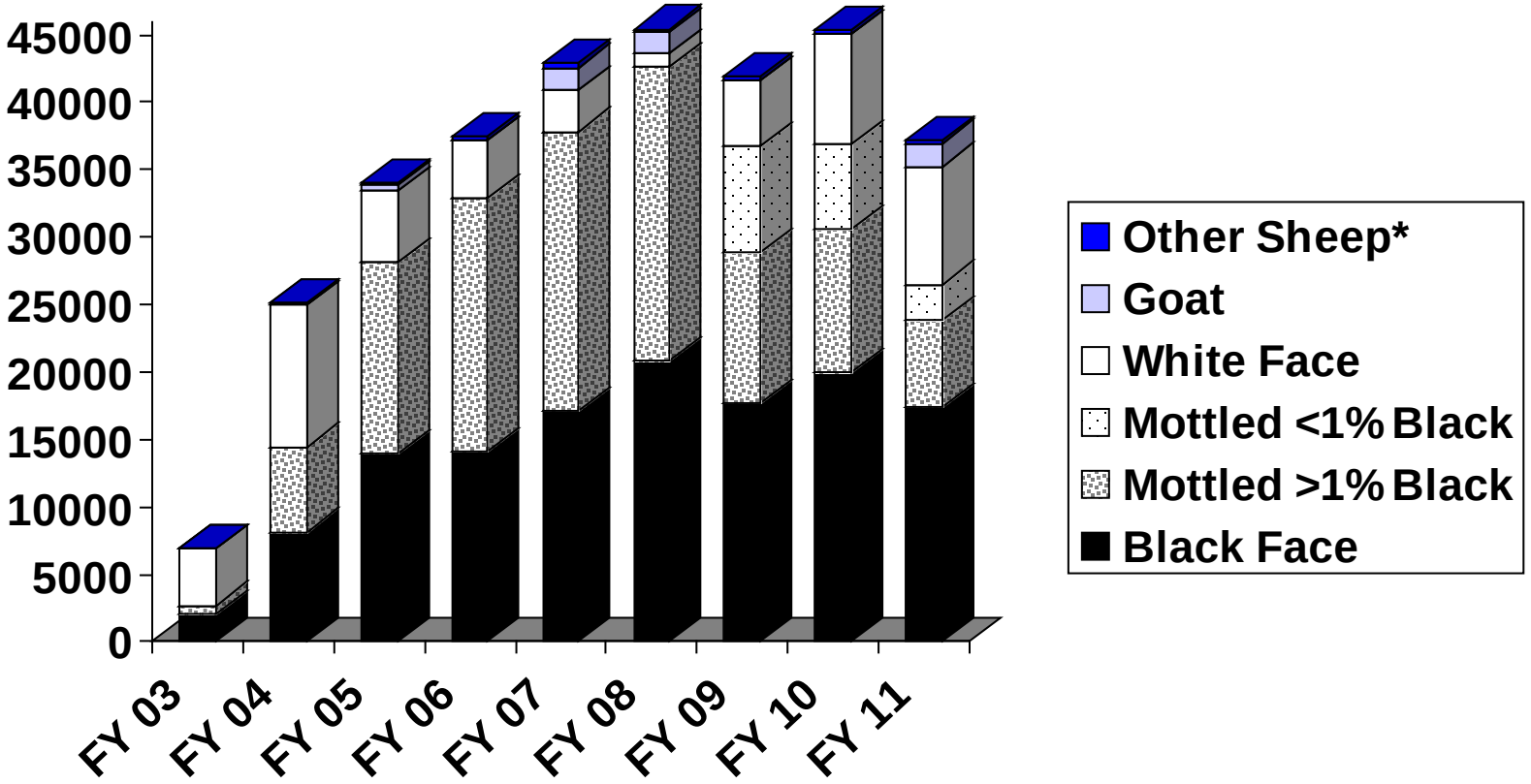
(Chart 6)



Surveillance Samples Collected at Slaughter

FY 2003-2011

(Chart 7)



*** Unknown face color**

Chart includes animals collected for RSSS & CSPS

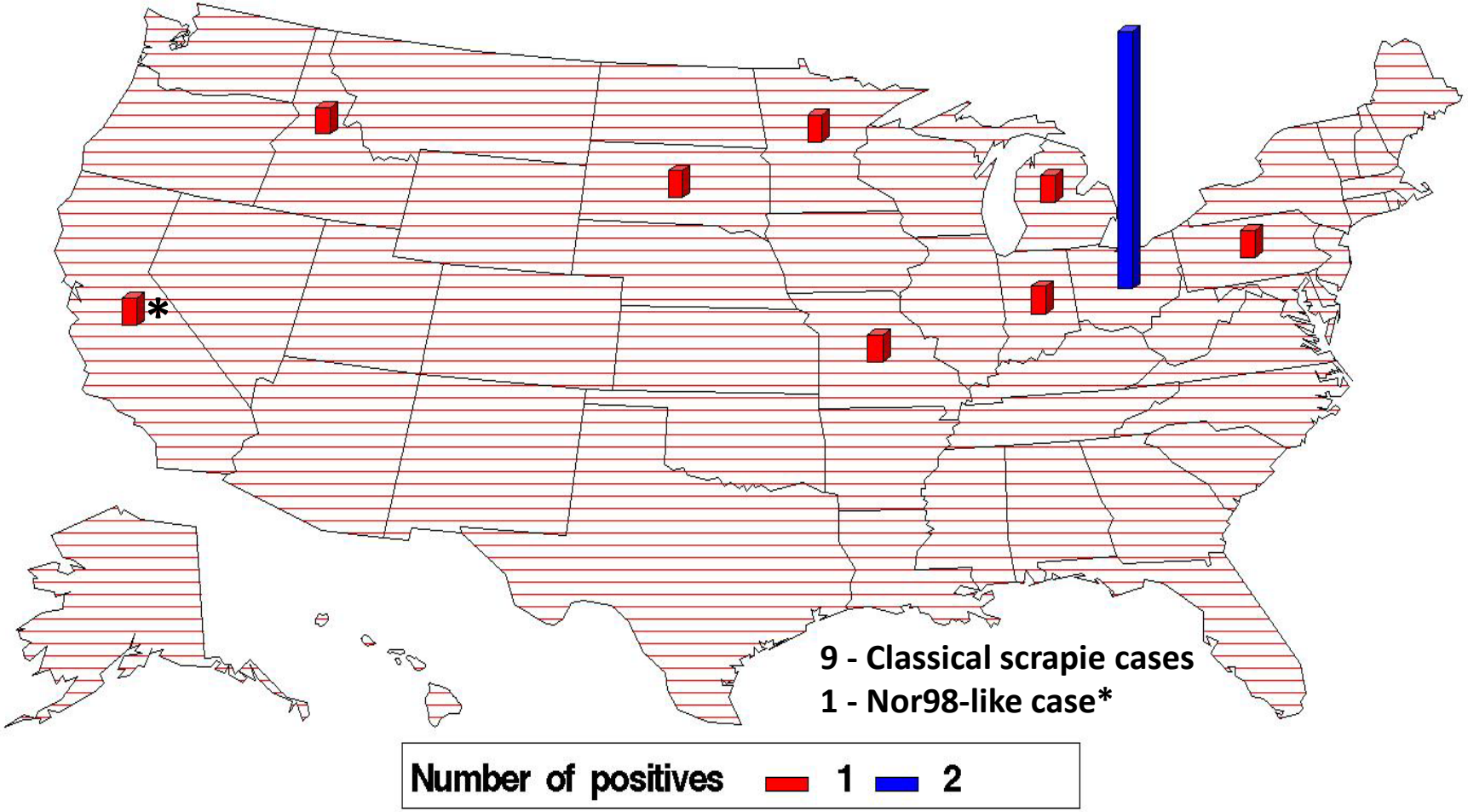
% Black of mottle-faced sheep available since FY 09

Regulatory Scrapie Slaughter Surveillance

Number of Positive Samples, FY 2011

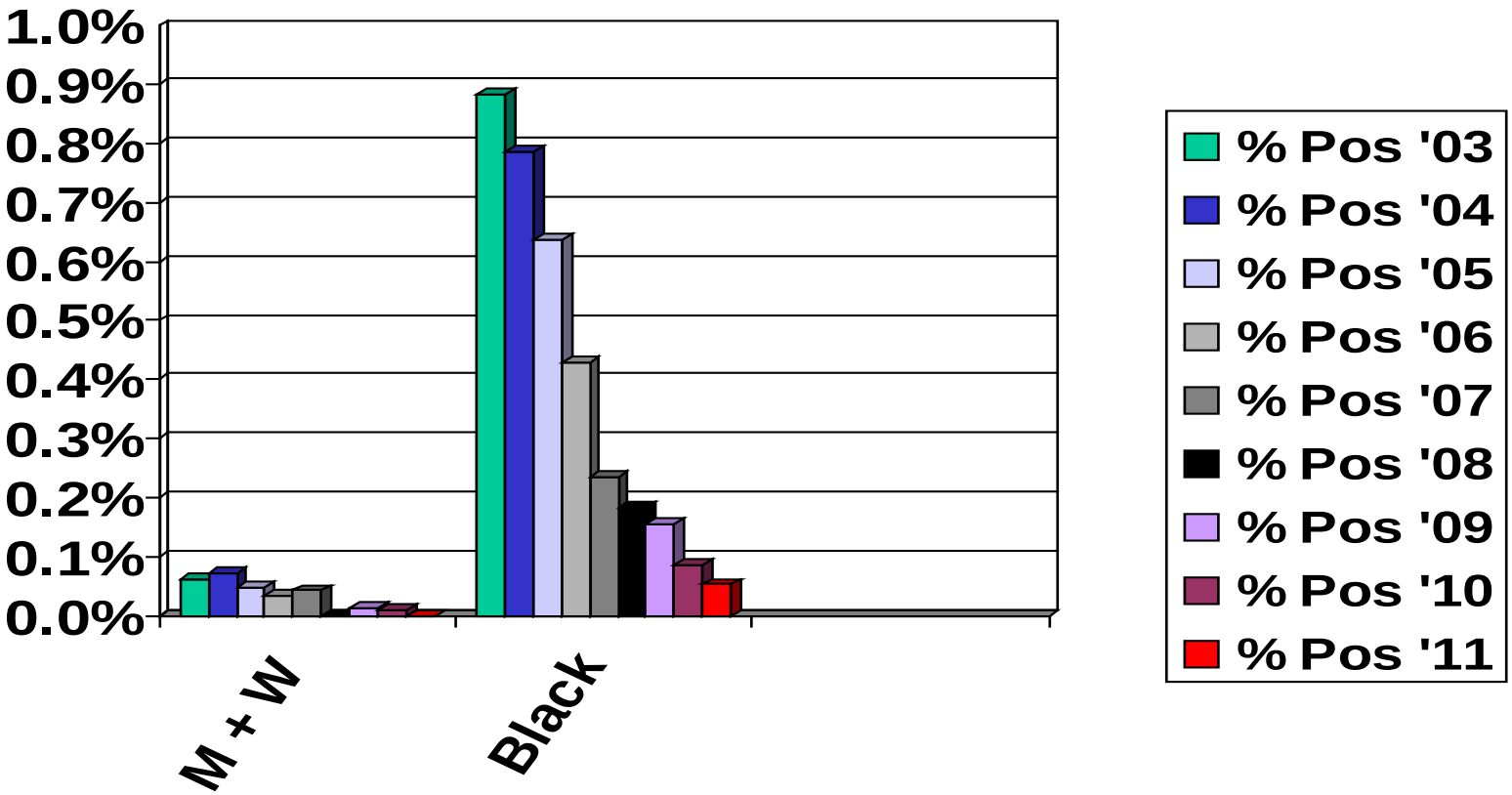
BY STATE OF TAG ORIGINATION

(Figure 11)



Percent of RSSS Samples that Tested Positive for Classical Scrapie by Face Color during each Fiscal Year (2003 – 2011)

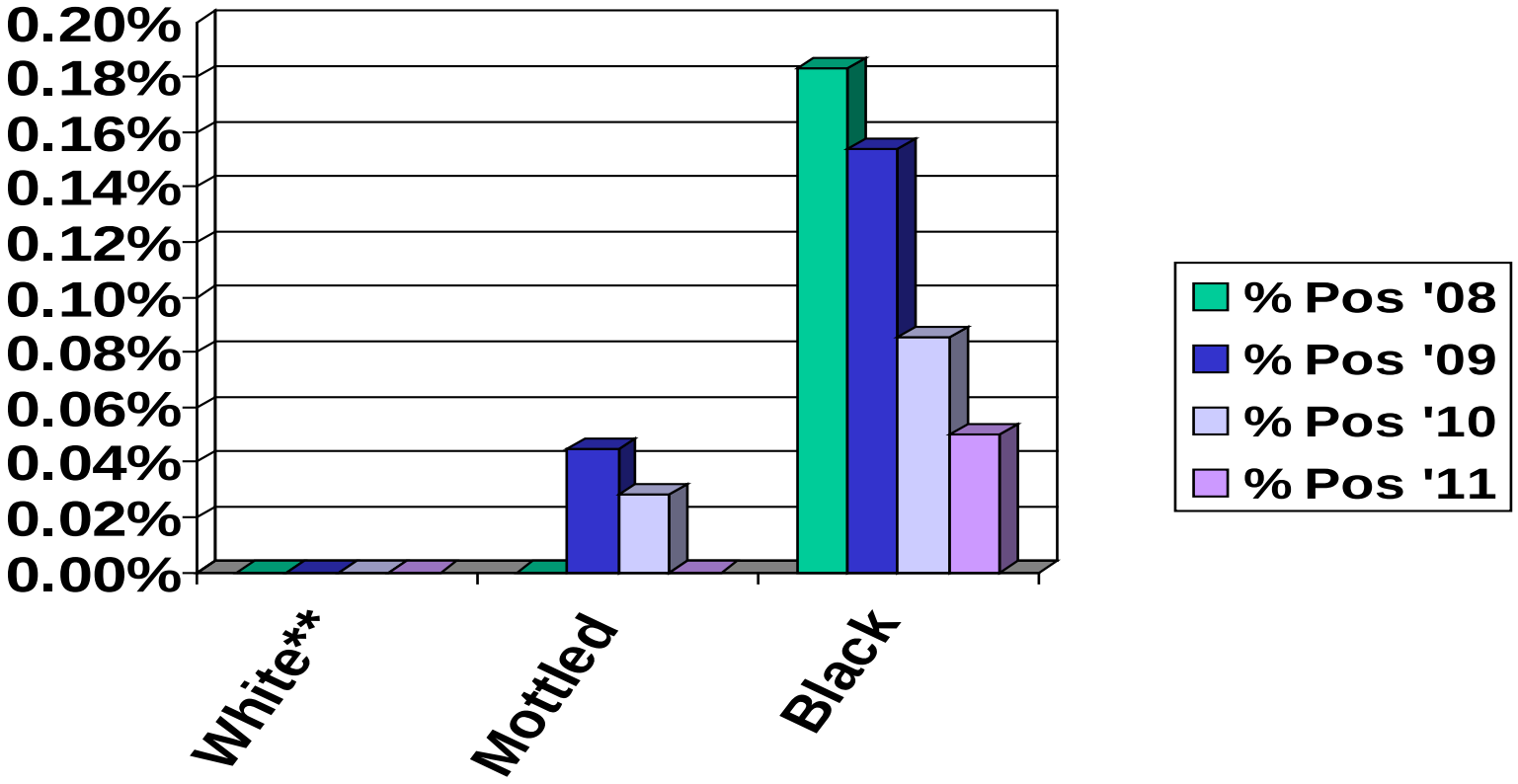
(Chart 8)



Adjusted to exclude multiple positive animals from same flock. Mottled and white-faced combined. Does not include Nor98-like scrapie cases found through RSSS (2 in FY 2007, 1 in FY 2008, and 4 in FY 2010.)

Percent of RSSS Samples that Tested Positive for Classical Scrapie by Face Color during each Fiscal Year (2008 – 2011)

(Chart 9)

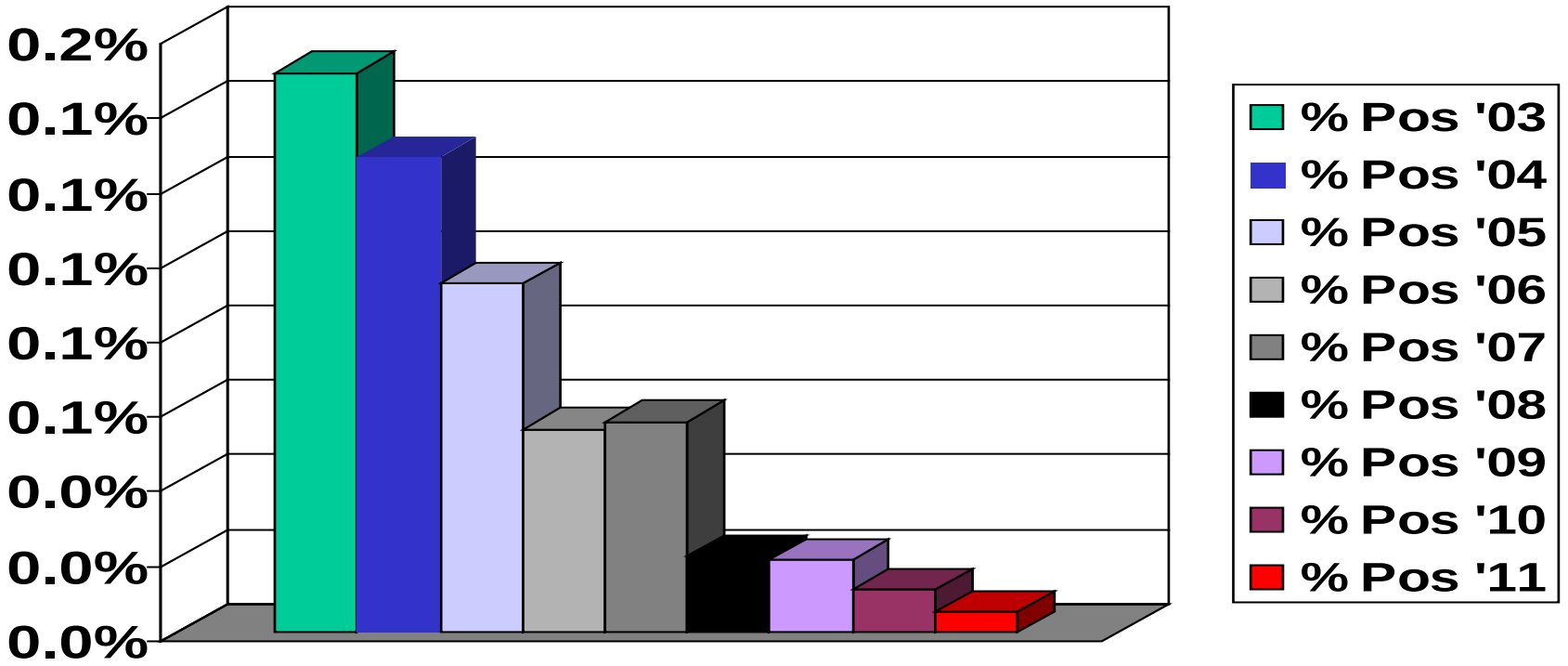


Through September 30, 2011—Does not include Nor98-like scrapie cases found through RSSS (4 in FY 2010, 1 in FY 2011).

****White includes sheep with <1% black on the face.**

Percent of RSSS Samples that Tested Positive for Classical Scrapie, Weighted by Face Color Fiscal Year (2003 – 2011)

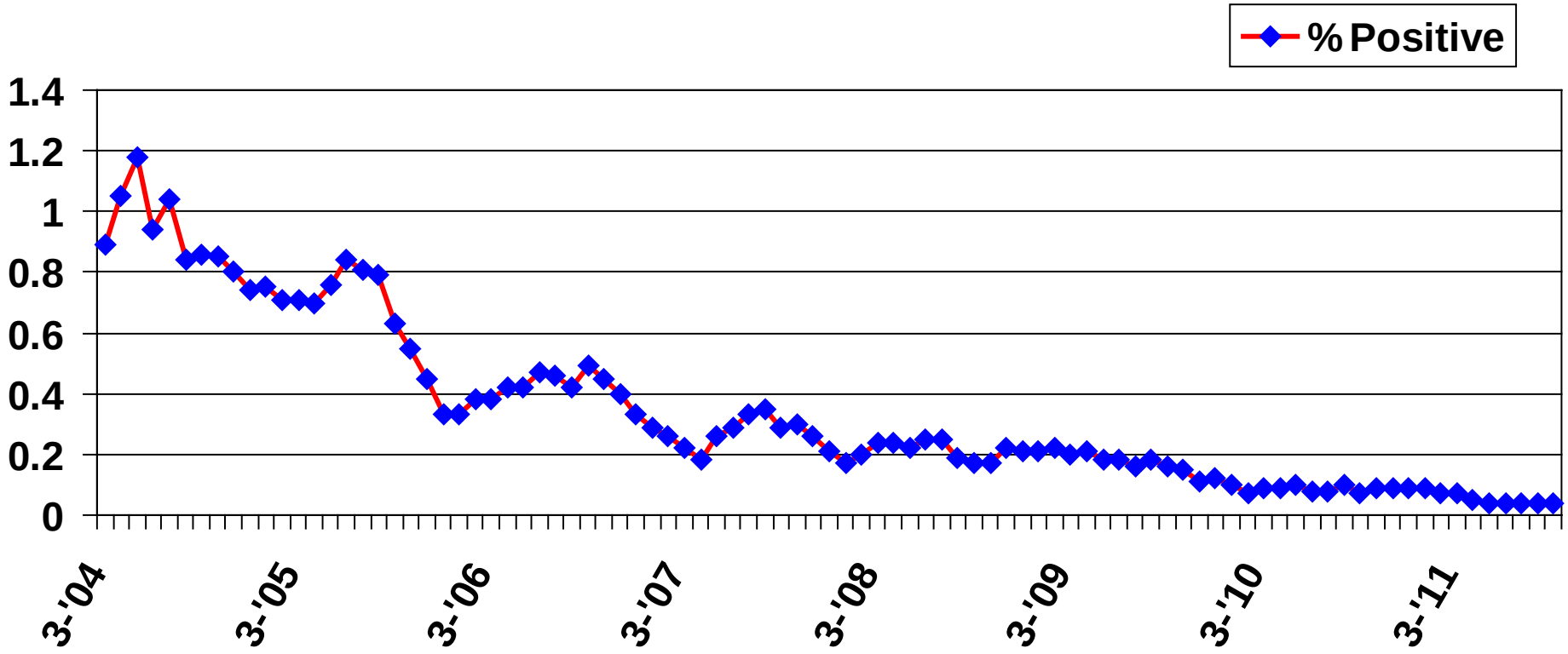
(Chart 10)



Adjusted to exclude multiple positive animals from same flock. Does not include Nor98-like scrapie cases found through RSSS (2 in FY 2007, 1 in FY 2008, 4 in FY 2010, 1 in FY 2011).

Retrospective 6 Month Rolling Average of Percent Classical Scrapie Positive Black-faced Cull Sheep Sampled at Slaughter *

(Chart 11)

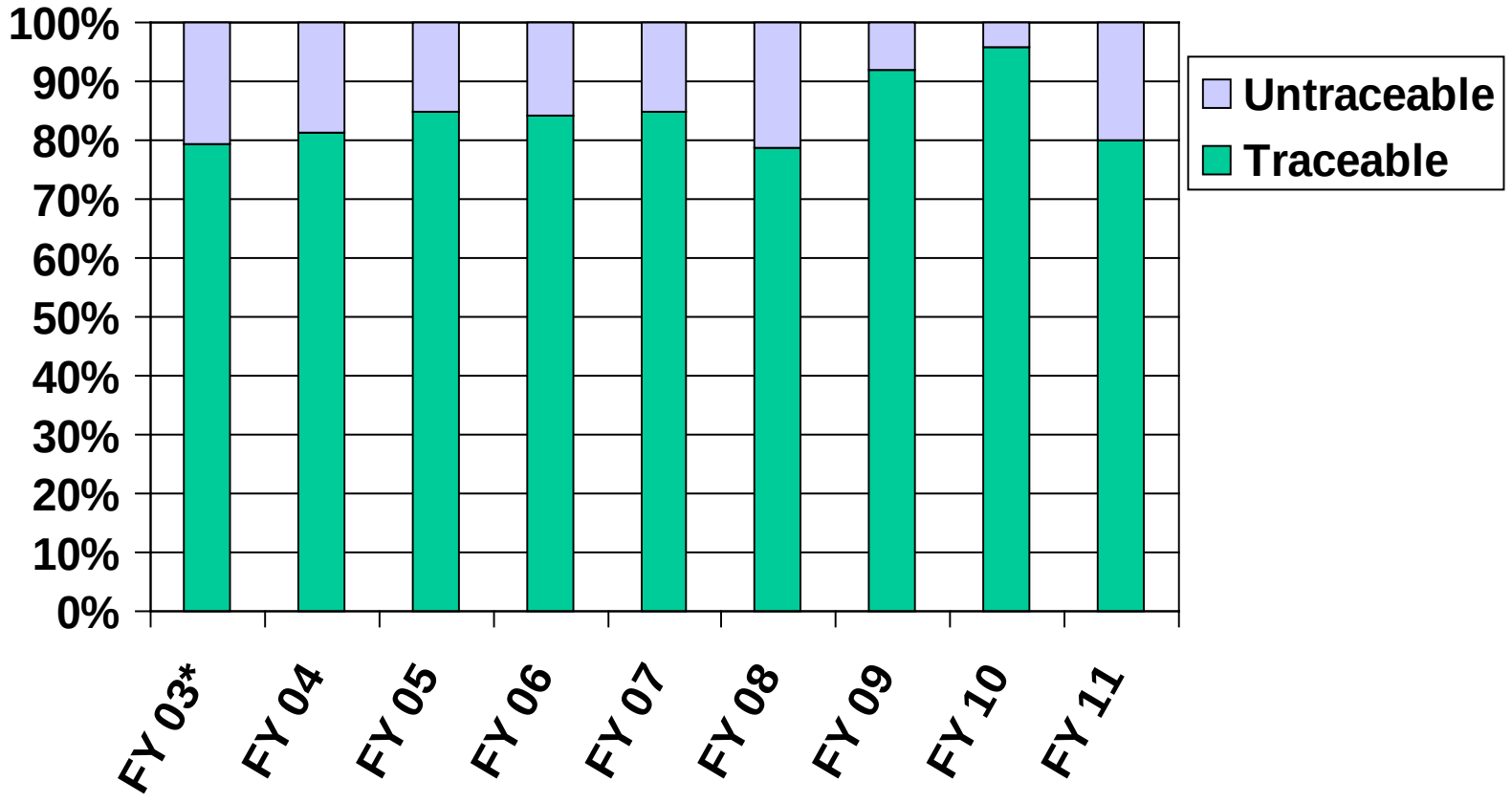


* Through September 30, 2011. Includes only sheep with test results reported. Includes multiple positives from same flock.

Investigations of RSSS Positive Animals

FY 2003 – FY 2011

(Chart 12)

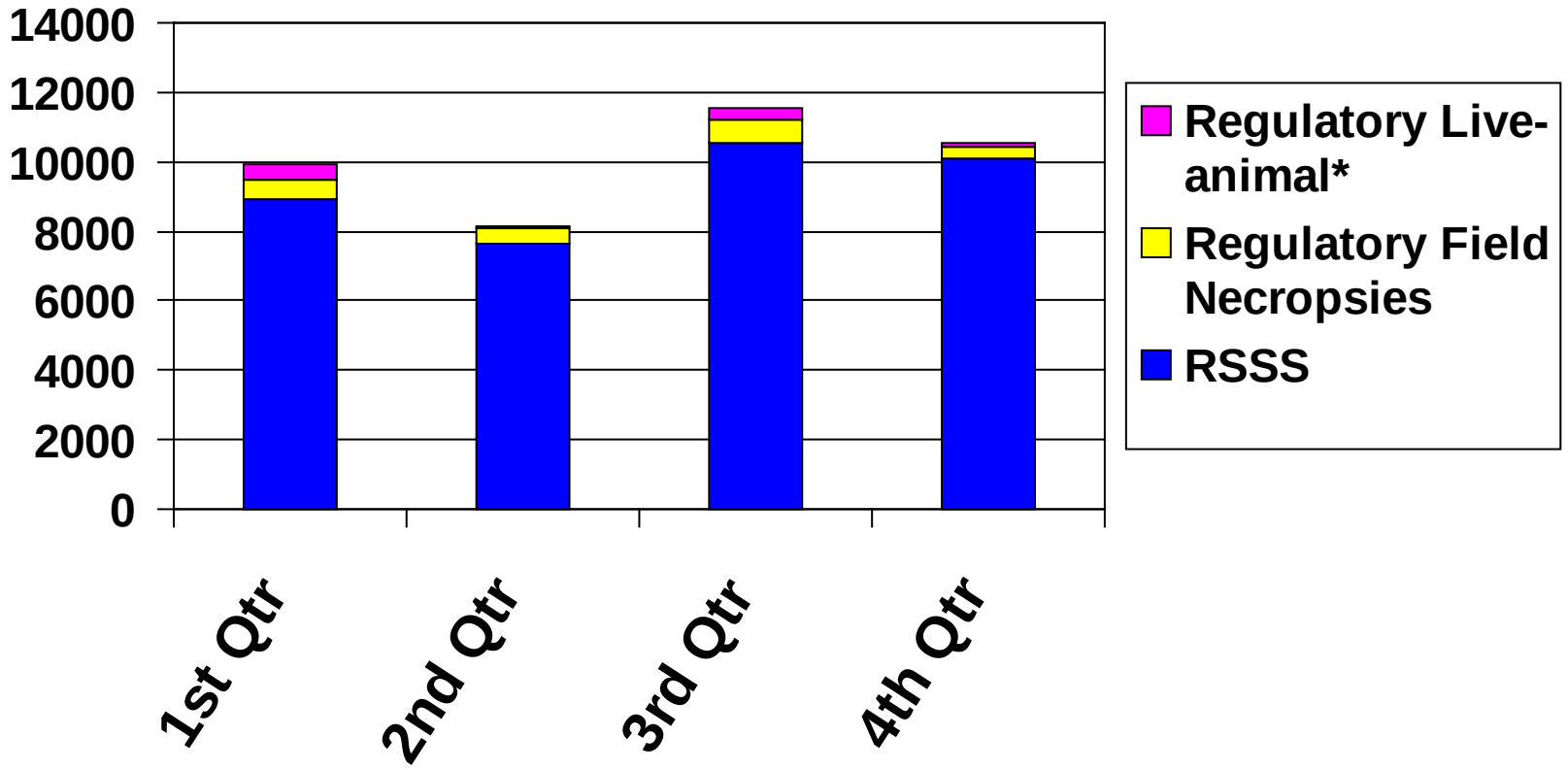


*** April – September, 2003**

Number of Animals Sampled for Scrapie Testing

by Quarter, *FY 2011*

(Chart 13)

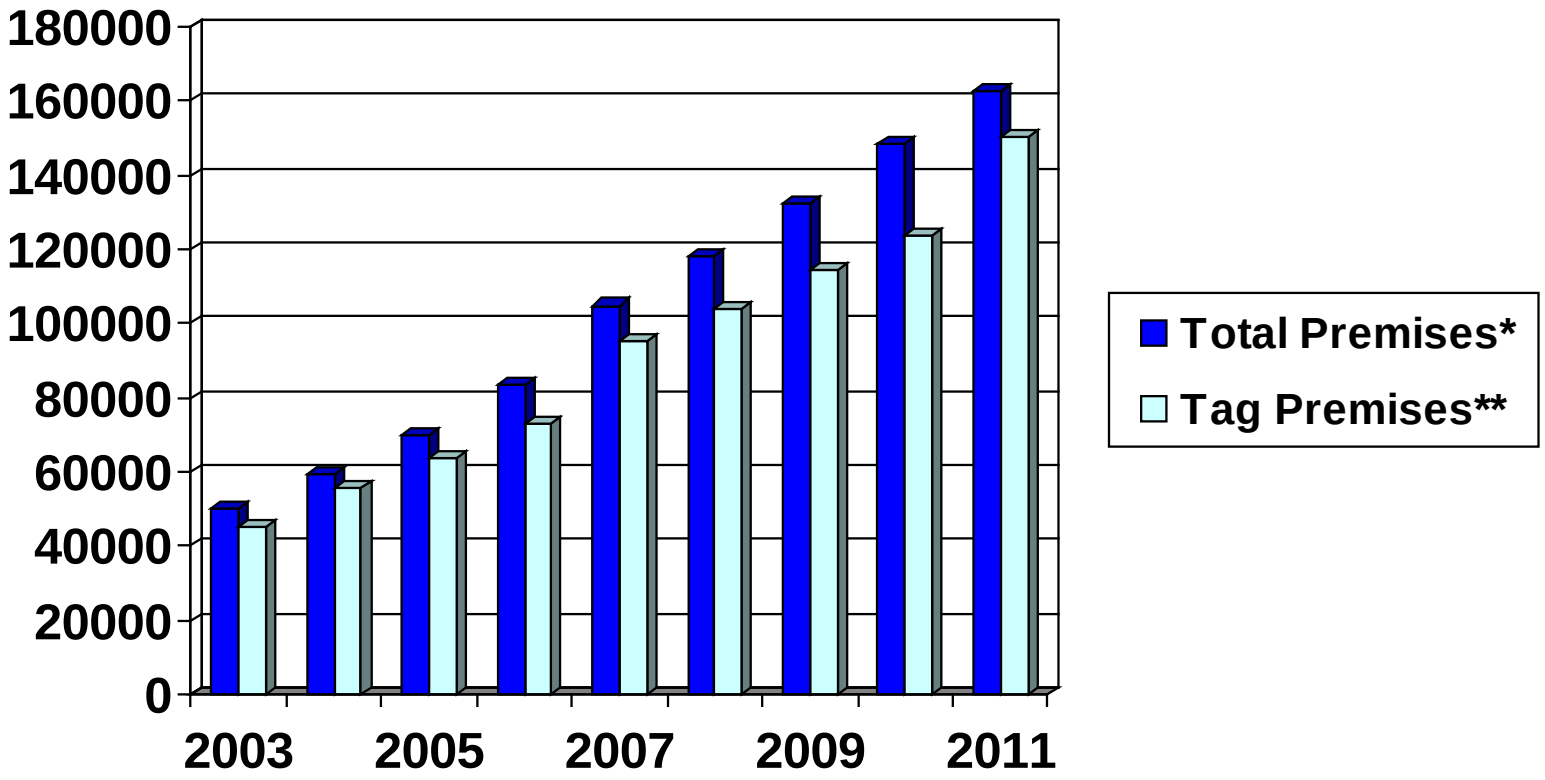


*** Includes both on-farm third eyelid (SRE) and rectal biopsies (RB).**

Premises in the Scrapie National Generic Database (SNGD) Assigned Official Eartags

by Fiscal Year, FY 2003 – FY 2011

(Chart 14)



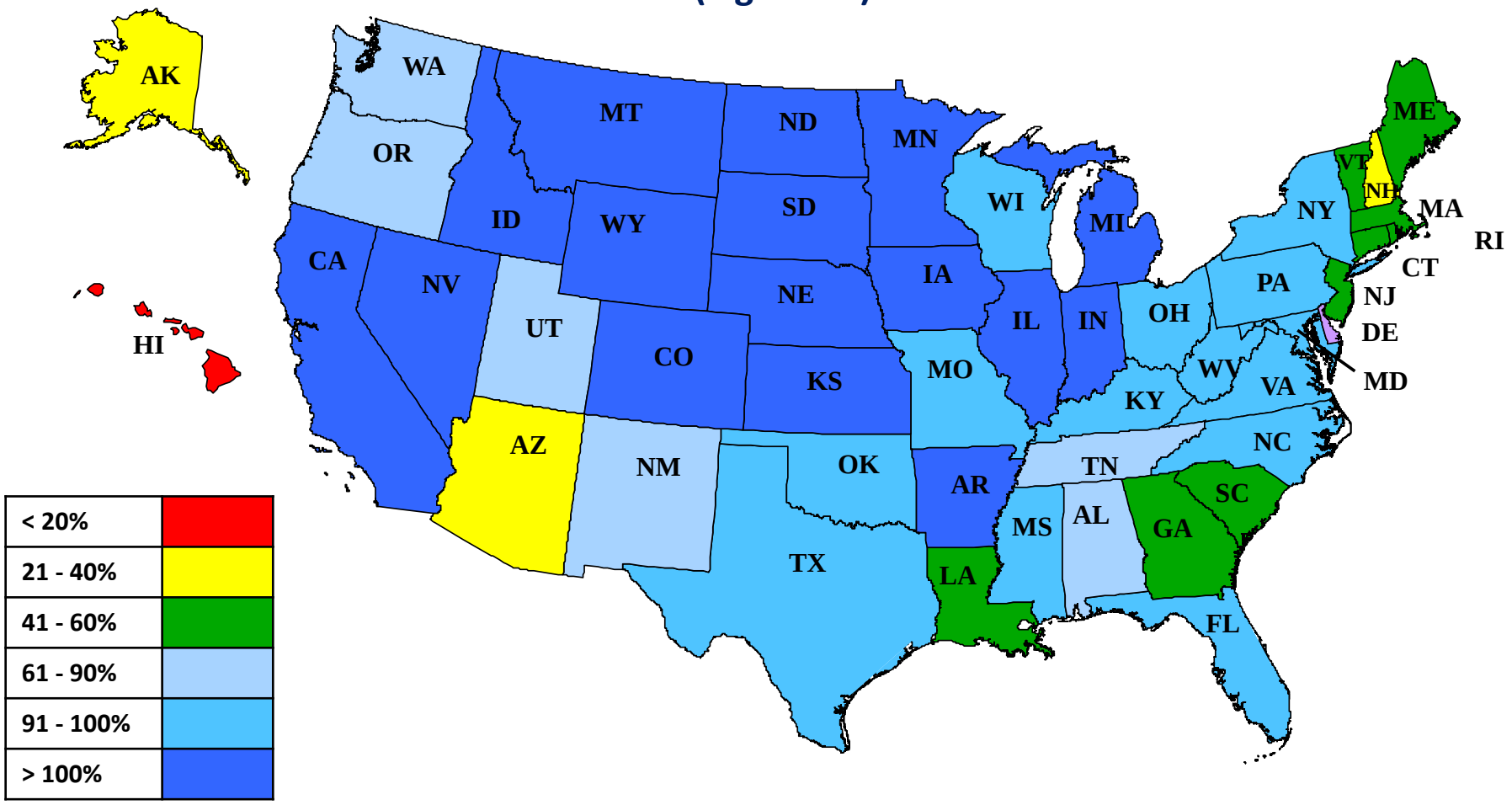
*** Total premises = number of premises IDs in SNGD at the end of each fiscal year**

**** Tag premises = number of premises assigned official tags at the end of each fiscal year**

Percent of Sheep Flocks Reported by NASS (2007 Census Report) Assigned Flock Identification Numbers in SNGD

as of September 30, 2011

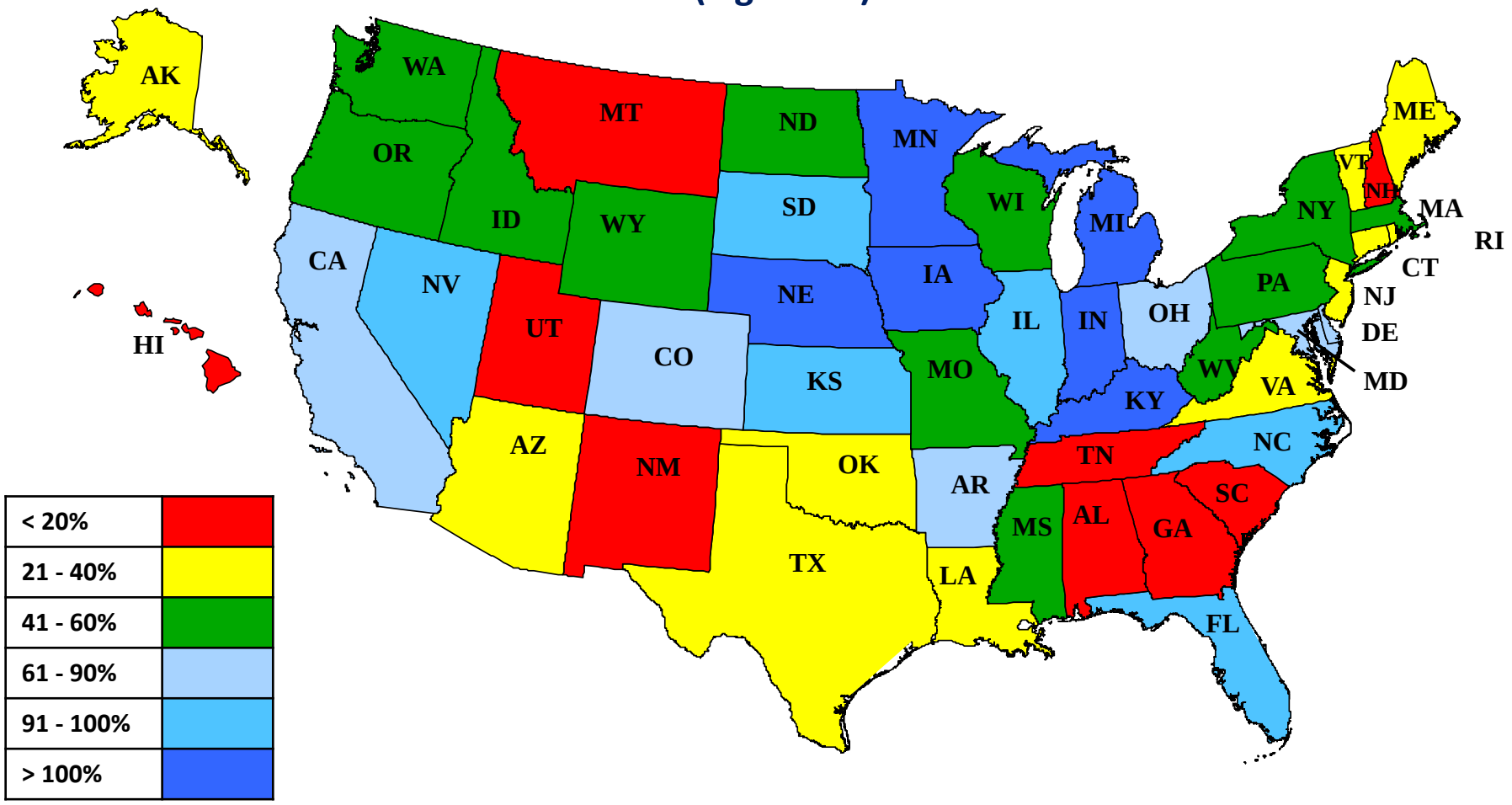
(Figure 12)



Percent of Goat Herds Reported by NASS (2007 Census Report) Assigned Flock Identification Numbers in SNGD

as of September 30, 2011

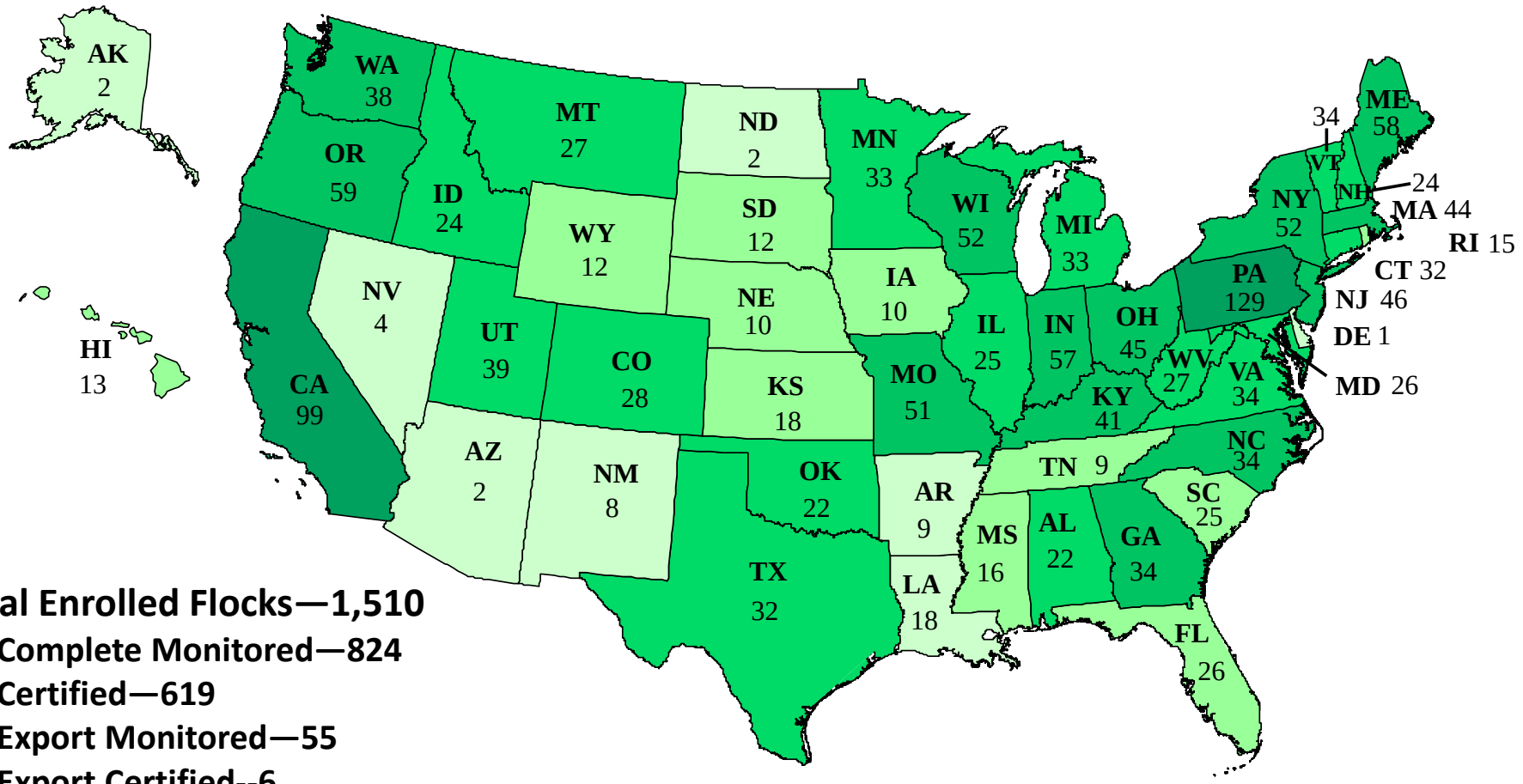
(Figure 13)



Scrapie Flock Certification Program Participating Flocks

As of September 30, 2011

(Figure 14)



Total Enrolled Flocks—1,510

- **Complete Monitored—824**
- **Certified—619**
- **Export Monitored—55**
- **Export Certified--6**
- **Selective Monitored—6**

SFCP Open Statuses by Fiscal Year

FY 1997 to 2011

(Chart 15)